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The T.U.C. and Railway Reorganisation

THE proposals for the reorganisation of British Railways embodied in last month's White Paper were described by the then Minister of Transport, Mr. Alan Lennox-Boyd, as " generally acceptable " when in draft to the bodies he had consulted, including the Trades Union Congress. It was clear, however, that the T.U.C. could not approve of the setting up of area boards, which are disliked by the Labour Party, of the absence on these boards of any representative of organised labour as such, or of the failure of the White Paper to provide for further " co-ordination " of transport. A summary of the comments by the General Council of the T.U.C. on the reorganisation scheme, as published, appeared earlier this week. The published scheme differs but little, it is stated, from the draft submitted by the Minister in May to the T.U.C., which finds it as unacceptable now as it did then. The area boards are considered to serve no useful purpose and to be an unnecessary additional link in the chain of authority—the latter a view shared by many with very different political views. The duties of the boards could be performed, it is maintained, by the existing railway officers of the British Transport Commission; in this respect the T.U.C. General Council prefers an organisation similar to that adopted on nationalisation in 1947. If area boards must be set up, the T.U.C. urges that they should include members with experience in the organisation of workers, as was stipulated for membership of the former Railway Executive under the Act of 1947. The proposed decentralisation of management within the Regions is considered likely to result in inflation of staff. On the other hand, the duality of control in railway catering as between Chief Regional Managers and the Catering Services, which latter are to attach an officer to each Regional headquarters, is objected to; the T.U.C. is in favour of giving sole control to Chief Regional Managers. These views are moderate and expressed with moderation, but those of the rank-and-file of railway trades unionists may be more hostile, especially as regards trades union representation on area boards. The Trades Union Congress in Brighton next month is little concerned with matters affecting the railways, so that further left-wing comment may not be heard until Parliament reassembles.

Exports of Railway Material

IN the first six months of 1954 exports of engineering products averaged £86,500,000 a month, some £6,000,000 a month more than in 1953, and railway materials played a considerable part in the achievement of this result. Published figures in the *Trade & Navigation Accounts of the United Kingdom*, show that a total of 540 locomotives and railcars were exported in the first half of 1954, an increase of 60 over the corresponding months of 1953. In terms of tonnage the figure is more striking, being 26,449 against 17,939. Steam locomotives accounted for 19,259 tons, electric locomotives 3,016, and internal combustion engined locomotives 4,174 of this total. The value was £9,779,854, compared with £5,933,800 for the first half of last year. The total tonnage of railway vehicles and parts fell from 130,289 to 119,469, but the value increased from £20,375,558 to £24,218,169. Wagon exports fell from £4,358,445 to £3,989,334, but carriages rose from £1,239,478 to £1,485,270. There were increases of £371,102 and £430,095 in the value of parts for carriages and wagons respectively. Six months is a short period to consider for railway products, the contracts for which are frequently spread over a much greater length of time.

The Suburban Passenger Problem in Canada

THE problems of peak-hour suburban travel are beginning to make themselves seriously felt in Canada, and losses on this type of service have been so considerable that in May last the Canadian Passenger Association filed an application with the Board of Transport Commissioners to increase business fares in two stages. The first hearing was held in Toronto in June, when the decision of the Board was reserved. As a preliminary measure, to bring the facts before the travelling public, the Canadian National Railways have issued a leaflet setting out the problems of running " commuter trains." The gravity of the problem is shown by the fact that in one year, revenue from the Toronto-Oakville-Hamilton suburban service was $115,000, while working expenses were some $300,000. The traffic is almost all carried by two trains in the morning and two in the evening, and these trains are idle for 20 out of the 24 hr. Commuter fares are about one-third of the ordinary railway fares and little more than half the corresponding bus fares. It is proposed to raise fares by about one cent a mile. The need for revision is plain when a railway has to spend, as the Toronto-Oakville-Hamilton line has to spend, no less than $2·60 for every dollar earned.

New Railway into Labrador

THE Quebec North Shore & Labrador Railway running from Seven Islands, on the St. Lawrence, to the Knob Lake iron ore deposits of Labrador, has been completed and was officially opened on July 31 by the Premiers of Newfoundland and Quebec. It is some 360 miles long and runs through rugged country, particularly in its first 100

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miles from the port. The line has been described in our issues of September 5, 1952 and January 29 last. Wagons with a capacity of 98 short tons are being used; trains will be formed of up to 125 wagons and hauled by 6,000-h.p four-unit diesel-electric locomotives. The intention is initially to convey daily between 50,000 and 70,000 tons of ore to the port in the months from May to October. The climate permits mining for only six months of the year, but the port will remain open longer; ore for which there is no shipping available can therefore be piled to await shipment. Centralised traffic control is in operation.

Overseas Railway Traffics

CANADIAN PACIFIC gross earnings for May were $35,700,000, against $41,325,000 for May, 1953; working expenses were $33,847,000 and $39,590,000 respectively. Aggregate gross earnings for the five months ended May 31 were $170,446,000, compared with $190,756,000 for the corresponding period of last year; there was a decrease of $1,568,000 on the figure for net earnings for the first five months of 1953. Antofagasta (Chili) & Bolivia traffic receipts, which were some £102,000 for the week to June 4, were £84,000 for that ended July 16, having fluctuated considerably in the meantime. For the corresponding weeks of last year, weekly receipts, which began at £90,000, touched £106,000 during June, and were over £105,000 for the week ended July 17. The exchange rate for bolivianos remained at 538·14 to the £ throughout these weeks both last year and this; for pesos, the rate in 1953 rose from 338·60 at the beginning of June to 345·60 in mid-July, whilst this year it remained at 440·60. South African Railways & Harbours aggregate receipts from railways for the period from April 1 to June 26 were £28,292,000, against £24,390,000 last year, all traffics showing increases over 1953.

Combined Motorcoach-Air Services to the Continent

THE keener competition for passenger traffic between Britain and the Continent likely to result from proposed combined motorcoach-air services is referred to in a letter from a correspondent elsewhere in this issue. The fares by the new services are expected to be only slightly higher than third class rail and steamer fares, and certain personal and, possibly, other services may be included, as is done by air lines. If this proves to be the case, motorcoach-air travel may be popular indeed with tourists —at least in summer. A great deal of motorcoach traffic may be diverted from the railway steamer services. Much will depend on what actually is offered. Surface travel has the advantage of reliability in all weathers. It suffers from the necessity to deal with passengers in relatively large numbers at ports for Customs and other formalities —in premises on which, in this country at least, the Government does not favour expenditure on improvements. There are also the additional charges for porterage and meals, though something has been done in quoting charges including meals on the "Golden Arrow." It would be interesting to know whether the motorcoach-air passenger will have to pay fully for all the roads and airports he uses, just as the cross-Channel traveller pays the full cost of his transport, besides port charges.

Outsize Loads

A CORRESPONDENCE in *The Times* has drawn attention to the nuisance to other road users of bulky loads conveyed by road motor vehicles. Writers urged greater use of the railways and of coastal shipping. Apart from the difficulty inherent in sea transport, of moving such bulky loads to and from the dock and of loading and unloading them at ports, the railways are handicapped by the loading gauge and by track occupation which makes increasingly difficult special workings where slow running is necessitated by clearances. One letter to *The Times* described as "fantastic" the sight of a standard-gauge locomotive being transported by road. The place was not named, but if the engine concerned was of 4-ft. 8½-in. gauge, it was probably an export to a railway overseas with a more ample loading gauge than British Railways. Locomotive manufacturers in this country are compelled to move some of their bulkier exports to the quayside by road with the aid of expensive equipment, whereas a bigger loading gauge would have facilitated transit by rail, often more cheaply. There is much to be said for a study of this problem, to see whether some agreement could be achieved between the railways and road transport to ensure that the roads are kept free of obstructive consignments when these could be moved conveniently by rail.

Open Day at Lancing

LAST week Lancing Carriage Works opened its doors to the general public, the extent of whose interest in British Railways was shown when 1,500 people took advantage of the occasion to inspect the 27 departments in which complete carriage renovation is carried out. Repairs are effected on progressive lines, and carriages are moved from stage to stage, at regular intervals, at a rate relative to output. The complete overhaul—including lifting, upholstering, painting, polishing, and electrical repairs—takes 25 days. The minimum number of carriages repaired is 2,500 per annum, based on a 44-hr. week. Open Days, while approved and permitted by the management, are organised by the 1,800 employees, which include technical, supervisory, and clerical grades. Last week's Open Day produced £73 11s. 10d. for the Southern Railway Servants' Orphanage & Homes for Old People at Woking. Apart from the smooth organisation of the Works, two points were apparent to visitors—the excellence of the working conditions, which compared very favourably with those found in many outside industries, and the care taken to obviate waste, involving the renovation wherever possible of every part, large and small, of the carriages brought in for rehabilitation.

Electric Traction Practice in Belgium

AS the conversion of more lines increases the demand for electric locomotives on the Belgian National Railways, the designs introduced reflect such features of the motor coach stock as automatic acceleration and camshaft control systems. It is noteworthy, also, that the latest locomotives have axle-hung motors, although one of the prototype classes of 1950 was equipped with spring-borne machines and a disc drive. The same trend has been seen in the motor coaches, for although the pre-war Brussels-Antwerp units used Sécheron transmission, all later types have been built with axle-hung motors, even for maximum speeds up to 87 m.p.h. Details of these developments are given in an article by Monsieur F. Baeyens, Ingénieur en chef, Belgian National Railways, on another page. The widespread use of motor coach trains for fast internal main-line services is of interest in the light of the report (summarised in our February 19 issue) by Mr. S. B. Warder, Chief Officer (Electrical Engineering), British Transport Commission, to the International Railway Congress, in which he drew attention to the advantages of a motive power unit that carries payload, and of a train without the additional resistance of axle-driven generators

Electric Locomotives for German Coalfields

THE scale of the brown coal opencast workings in Germany for many years has given rise to heavy and powerful locomotives, first steam types, but for many years now to single-phase electric locomotives of low height, and known generically as *abraumlokomotiven* (*abraum* literally means "removal"). The largest types are for main haulage, sometimes over considerable distances; and a year or two ago they reached a peak of 120-ton Bo-Bo-Bo locomotives of 1,500 h.p. and 80,000 lb. starting effort built by Henschel. But at the present moment there is in course of execution in Germany what

is probably the largest single order ever placed for such units, and one which involves also an axle load of 30-32 tons with standard-gauge Bo-Bo locomotives of 120-125 tons weight. The Rheinische Braunkohlen A.G. has placed orders for 56 of such locomotives for 6,000 V. 50 cycles single-phase, all with regenerative braking; 53 of these are to be converter locomotives, of which 21 are being built by Henschel, 19 by Krupp, and 13 by Krauss-Maffei, with Henschel the main contractor for the complete mechanical portion design. In addition, each constructor is building one rectifier type of locomotive to incorporate regenerative braking. The individual output of all locomotives is 2,000 h.p., but multiple-unit coupling of two is possible, giving an aggregate of 4,000 h.p. Starting tractive effort of one locomotive will be 88,000 lb. and top speed 43 m.p.h. These locomotives are intended for 18- to 20-mile hauls from the coalfields to the power stations.

Changes at the Ministry

THE Ministerial changes which the Prime Minister announced last week included the appointment of Mr. Alan Lennox-Boyd, who has been Minister of Transport since 1952, to be Secretary of State for the Colonies and his replacement at Berkeley Square House by Mr. John Boyd-Carpenter. Mr. Lennox-Boyd had been marked for promotion for a considerable time. There is little doubt that, but for the need to avoid any break in continuity at the Ministry, because of the phase of re-organisation through which the transport services of this country have been passing since the 1953 Act came into effect, he would have left that office earlier. His appointment as Secretary of State for the Colonies will take him once more into a field of activity which is very near to his heart. Before he became responsible for transport he was Minister of State for Colonial Affairs, and he showed a keen interest and lively intelligence in dealing with them. He has never lost touch completely with that aspect of administration and, because in all the Colonies transport is and must be a basic factor in economic and political well-being, he will return to the Colonial Office strengthened by his experience of the last two years.

As Minister of Transport, Mr. Lennox-Boyd had a difficult and often thankless task but he discharged it with an energy and good humour which won him a wide circle of friends in all sections of the transport community. His major work was the putting through Parliament of the Transport Act of 1953 which amended the Act of 1947 under which the Socialist administration had nationalised the railways and other forms of inland transport of this country. Obviously it was politically a highly controversial measure and the responsible Minister had to bear the brunt of a good deal of criticism both inside and outside the House. He had also the task of transmitting to the British Transport Commission the Government views on policy which formed the basis of the recently-issued White Paper for the re-organisation of the railways under the 1953 Act.

These activities, although perhaps major, were only a part of his responsibilities, for the scope of the Ministry covers many aspects of transport including civil aviation. He had to take over his office at short notice, as the result of a breakdown in health of his predecessor, and at a time when a major Act of Parliament was already in active preparation. He brought to this task an enthusiasm which went far to disarm critics of some of the details of the policy he had to implement and which will stand him in good stead in his new and wider responsibilities.

Mr. Boyd-Carpenter, who is also a young man of energy and vision, goes to the Ministry of Transport from his office as Financial Secretary to the Treasury, which he has held since 1951. He also is faced almost immediately with the handling of a major railway measure, for he will bear the brunt of explaining to Parliament the implications of the White Paper on the re-organisation of railways which will come up for discussion in the autumn. Further, on him must fall the responsibility for seeing that it is implemented in accordance with the policy laid down by the Government. Notwithstanding the wide measure of agreement which the terms of the White Paper secured with industrial organisations, criticisms of the proposals are not likely to be wanting when it is discussed in the House of Commons. A good deal of pressure is likely to be brought on the Minister to explain not only the terms of the proposals but their implications on the future organisation of transport in this country.

The upheavals which British transport has suffered in recent years have not made either for stability in administration or efficiency in operation. One of the major tasks of the new Minister, so far as it lies within his power, must be to ensure that the industry has a reasonable promise of as long a period as is possible free from political disturbance so that it may go ahead with plans to put its house in order. This is not a matter on which any Minister can have the final word but he can at least do two things. He can represent this need forcibly to the administration he serves, and endeavour to secure that Government action is not of a kind which is likely to be upset immediately by a succeeding administration of a different political complexion, and he can himself abstain from any action which may embarrass the British Transport Commission in the conduct of its business or which may savour of political interference.

Motive Power Progress in Victoria

BY the completion of the first stage of the Gippsland line scheme of the Victorian Railways, Australia gains its first main-line electrification, appropriately one hundred years after the opening of the first steam-operated railway in the State, and indeed in Australia. The Gippsland line links Melbourne with the south-eastern part of the State, where great brown-coal deposits in the Yallourn district are being exploited by the State Electricity Commission, and the electrification is a major part of the comprehensive plan of improvements to this line to enable it to carry the increasingly heavy brown-coal traffic. The annual production of Yallourn is now more than 6,000,000 tons and it is aimed to increase it to 10,000,000 by 1956.

The Gippsland electrification, being carried out at 1,500 volts, will extend ultimately as far as Traralgon, 97½ miles from the capital, and will also take in the Moe-Yallourn section. The English Electric Co. Ltd. has supplied 25 2,400-h.p. Co-Co locomotives for mixed-traffic working over the line; pending the recent completion of the first stage, to Warragul, 61 miles from Melbourne, reported on another page of this issue, these locomotives, which were described in our January 22 issue, have been engaged on transfer and other goods workings within the extensive electrified suburban zone of Melbourne.

The railways have now received all their 26 Clyde-General Motors 1,500-h.p. diesel-electric locomotives. These units soon proved their worth on both passenger and goods turns on the main lines; the longest run which they undertake is to Mildura, some 355 miles from Melbourne, via Ballarat. The use of diesel power has largely contributed to the movement of wheat to bulk storage centres well before schedule for two seasons. The diesel locomotives have put up some remarkably fine performance figures.

The 17 units which were in service by the end of last September had run 1,700,000 miles; the annual mileage of one was 177,000, in comparison with the record annual mileage of 80,000 for a steam locomotive. Earlier this year the Victorian Minister of Transport commented favourably on the part played by the diesels in regaining traffic from the roads by their capacity for hauling goods trains at higher speeds, an advantage which the railways are following up by building new bogie vans able to run at express speeds. The Warragul electrification has released for other duties the diesels which formerly drew the "Bairnsdale Express," now once more steam-hauled beyond Warragul to Sale and Bairnsdale. A batch of 25 800-h.p. Bo-Bo general-purpose diesel-electrics for use

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on heavy goods transfer, shunting and local passenger and goods services is on order from the Clyde Engineering Co. (Pty.) Ltd.

For the Melbourne suburban services 30 new seven-car trains are being built. The order is shared between the Gloucester Railway Carriage & Wagon Co. Ltd. (90 motor coaches), and two Australian firms, Martin & King (Pty.) Ltd. (120 trailers) and Bradford, Kendall Limited (bogies). The English Electric Co. Ltd. is supplying the electrical equipment. The motor coaches are to be assembled at Newport shops, enabling them to be available at a rate coinciding with the delivery of the trailers from the manufacturer, and also allowing all the stock to enter service much sooner than if the whole order had gone to a single manufacturer. The design of the new stock was settled only after extensive trials with a prototype car. Considerable new works are planned to increase the capacity of the heavily-taxed suburban lines, including the construction of an underground section beneath the centre of the city.

Within the past few years the Victorian Railways have acquired a large number of new steam locomotives, forming, like the electric and diesel locomotives, part of the large-scale post-war modernisation programme "Operation Phoenix." Fifty "N" class 2-8-2, and 70 "R" class main-line 4-6-4s, built by the North British Locomotive Co. Ltd. are now being joined by the first of the 60 "J" class 2-8-0 locomotives which the Vulcan Foundry Limited is supplying for use on country lines for passenger and light goods traffic. The "R" class locomotives, as well as the diesel-electrics, have enabled important accelerations of many main line services to be made. For some years good use has been made of railcars on branch and other medium-traffic services. The original petrol-electric vehicles dating from 1928-31 have been converted to diesel-electric operation. The latest additions to the fleet are 12 280-h.p. articulated three-car sets and 15 153-h.p. motor coaches and trailers, orders for which have been carried out by Walker Bros. (Wigan) Ltd. and Martin & King (Pty.) Ltd. The three-car sets carry 94 passengers and a ton of luggage; the railcars and trailers together hold 78 passengers and 4 tons of luggage.

Single-Anode Rectifiers for Substations

ONE of the characteristics of the single-anode rectifier which has encouraged its use in locomotives and motor coaches is the ease with which units can be handled and replaced in case of failure. The ability to restore output by changing one element of a group is equally attractive for substations, and in electrifying the Lyons-Culoz section the French National Railways have equipped the four substations with single-anode rectifiers of two different types, known as excitrons and ignitrons.

In a normal multi-anode rectifier the cathode spot, once it has been struck, is maintained by the fact that the conducting periods of the anodes overlap. When each anode and cathode forms a seperate unit, other methods have to be adopted, either to maintain emission from a cathode during the negative half-cycle of its anode, or to strike the arc afresh at every positive half-cycle. In the excitron the arc is maintained during non-conducting periods by auxiliary anodes at a low positive potential. The ignitron on the other hand, is equipped with a special electrode, or igniter, with its tip permanently immersed in the mercury pool. An alternating potential of the same frequency as that on the anode is applied to the igniter and causes the arc to be struck at an instant during each cycle which can be adjusted by varying the relative phase of the igniter and anode voltages, thus also controlling the rectifier output voltage. Output voltage control in an excitron is obtained by means of a grid as in an ordinary multi-anode rectifier.

The three substations with excitron rectifiers on the Lyons-Culoz line (see December 25, 1953, issue) are each equipped with two 2,000 kW. groups of six Jeumont units, with pump-maintained vacuum and forced air cooling. A single-anode cylinder of this type weighs approximately 8 cwt. At Montluel, the fourth substation, the equipment consists of two 2,000-kW. groups of 12 Schneider-Westinghouse ignitron pumpless water-cooled rectifiers. The rectifier and transformer of each group are arranged so that a transformer with two three-phase secondaries gives the equivalent of a twelve-phase rectifier installation. Each ignitron cylinder is 9 in. in diameter and 2 ft. 5 in. high, and weighs 101 lb. These reduced sizes and weights have permitted a noteworthy simplification of the substation buildings compared with those on the Paris-Lyons main line. An article in the June issue of the *Revue Générale des Chemins de fer* mentions in particular that the floors are at ground level, instead of being raised so as to permit of rectifiers being loaded on to wagons in the substation siding without special lifting tackle; and that it is no longer necessary to mount the rectifiers on wheeled platforms, or to provide runways for moving them into and out of position. A simple truck has been designed for handling the relatively heavy Jeumont cylinders when replacement is necessary. These developments are in line with practice in industrial electrification, where there is growing appreciation of the convenience of single-anode units in permitting flexibility of layout and avoiding the need for buildings of special design and construction to accommodate the rectifiers.

British Transport Commission Traffic Receipts

PASSENGER receipts for British Railways in Period 7, the four weeks ended July 12, exceeded those for Period 6 by £1,700,000, and were £371,000 above those for the corresponding period of last year. The rise between these periods last year was £1,141,000, so that the increase compensates to some extent the fall in Period 6 and the small gain in Period 5.

Merchandise and livestock figures show a gain of £357,000, continuing the level which has been a feature of these figures for some time. The rise of £489,000 compares with a gain of £544,000 between the same periods of 1953. Mineral traffic shows an increase of £86,000 over last year, which is somewhat less than the gain in previous periods. Coal class traffic continued at a high level and at £9,153,000 shows an increase of £907,000 over last year; while this rise is a little less than the exceptional rise of £1,211,000 in Period 6, it is still £246,000 more than the increase of £661,000 between the corresponding periods of last year. The aggregate gain for coal class traffic in 1954 reached £3,590,000, a figure paralleling the gain for the whole of the B.T.C. passenger traffic. Receipts from parcels and so on continue the satisfactory

—	Four weeks to July 18		Incr. or decr.	Aggregate for 28 weeks		Incr. or decr.
	1954	1953		1954	1953	
	£000	£000	£000	£000	£000	£000
Passengers—						
British Railways ...	11,603	11,232	+ 371	59,133	57,773	+ 1,360
London Transport—						
Railways	1,405	1,369	+ 36	9,983	9,689	+ 294
Road Services... ...	4,017	3,925	+ 92	27,190	26,242	+ 948
Provincial & Scottish Buses	4,603	4,471	+ 132	25,962	25,111	+ 851
Ships	757	697	+ 60	2,475	2,344	+ 131
Total Passengers ...	22,385	21,694	+ 691	124,743	121,159	+ 3,584
Freight, parcels & mails—						
British Railways—						
Merchandise & Livestock	8,696	8,339	+ 357	60,710	58,629	+ 2,081
Minerals	3,500	3,414	+ 86	24,927	24,474	+ 453
Coal & Coke ...	9,153	8,246	+ 907	62,949	59,359	+ 3,590
Parcels, etc., by passenger train ...	3,237	3,025	+ 212	21,343	20,430	+ 913
Total British Railways	24,586	23,024	+ 1,562	169,929	162,892	+ 7,037
British Railways C. & D.	959	920	+ 39	6,579	6,274	+ 305
Others*	6,227	6,776	— 549	44,477	45,173	— 696
Total freight, parcels and mails	31,772	30,720	+ 1,052	220,985	214,339	+ 6,646
TOTAL	54,157	52,414	+ 1,743	345,728	335,498	+ 10,230

* Inland waterways, freight haulage, and ships

trend previously noted and at £3,237,000 are £212,000 more than in the corresponding period last year. The aggregate increase for the year is now £913,000. Collection and delivery services show a rather smaller rise than of late with an increase of £39,000. At £959,000 these services earned £35,000 more than in Period 6, but the rise between the corresponding periods of 1953 was £74,000.

London Transport railways receipts rose by £36,000 compared with 1953, but fell by £5,000 from Period 6. Between the similar periods of last year there was a fall of £130,000 so that the present figure is more encouraging than at first appears. London Transport road services also recovered and at £4,017,000 show a gain of £92,000 over last year. The receipts are £30,000 less than in Period 6, but there was a fall of £134,000 between these periods last year, so that, as with the London Transport railways, the receipts are better than they appear. The influence of Coronation traffic last year is apparent when these comparisons are made.

Provincial and Scottish buses, at £4,603,000, show an increase of £411,000 over Period 6 and of £132,000 over last year. Passenger shipping figures continue their steady rise and with a gain of £60,000 in this period have now reached an aggregate gain of £131,000 over the similar aggregate for 1953. Receipts for inland waterways, freight haulage, and ships show a fall of £549,000 compared with the corresponding period of last year, and confirm the impression that the rise of £77,000 in Period 6 was exceptional and contrary to expectation. The aggregate loss for the year, as against the similar aggregate for last year, is now £696,000.

PERCENTAGE VARIATION 1954, COMPARED WITH 1953

	Four weeks to July 18	28 weeks to July 18
British Railways—		
Passengers	+ 3·3	+ 2·3
Parcels	+ 7·0	+ 4·4
Merchandise & livestock	+ 4·2	+ 3·5
Minerals	+ 2·5	+ 1·8
Coal & coke	+11·0	+ 6·0
Total	+ 5·6	+ 3·8
C. & D. services	+ 4·2	+ 4·8
Ships (passengers)	+ 8·6	+ 5·5
British Road Services, Inland Waterways and Ships (cargo)	− 8·1	− 1·5
Road Passenger Transport, Provincial & Scottish	+ 2·9	+ 3·3
London Transport—		
Railways	+ 2·6	+ 3·0
Road services	+ 2·3	+ 3·6
Total	+ 2·4	+ 3·4
Aggregate	+ 3·3	+ 3·0

Through Wagon Traffic from Spain

THE adoption for engineering reasons of the 5-ft. 6-in. gauge in Spain and Portugal prevented through running to and from the rest of Europe, but the inconvenience was little felt for some time. With the rise and growth of industrial development, however, in the Iberian peninsula, it became a matter for increasing regret that an obstacle to efficiency had been permitted to arise, or not been removed when this might have been done without prohibitive expense. The difficulties of this particular break-of-gauge are not perhaps even now greatly felt with passenger traffic, but with freight they are appreciable, especially with perishables. Some aspects of this matter are discussed in our contemporary, *Ferrocarriles y Tranvias*, by Señor L. Saldana Muzquiz, of the Spanish National Railways.

The need for quick conveyance of the orange fruit traffic, vital to the Spanish economy, to outside markets began to command attention some time ago, and it was believed that if the delays arising from break-of-gauge could be obviated there was a worthwhile traffic in other fruits awaiting to be gained. The only practicable way to meet the situation was to endeavour to construct rolling stock able to run over the two gauges by changing axles at the frontier. As stated in an article in our June 19, 1953, issue the problem was taken up by Transfesa, a private Spanish undertaking in close relation with the railways and engineering associates, expressly for the purpose of developing the orange traffic. It does not consist, however, merely in designing suitably fitted vehicles. To handle them quickly in train loads require extensive installations at the frontier stations, but neither the Spanish nor the French railways felt able to incur the considerable outlay involved. It was suggested that use be made of the existing small facilities at Irun, on the Bay of Biscay, provided in connection with earlier through running of wine transport wagons belonging to a French firm but which had been little used. As they were not adaptable to the requirements now envisaged, however, the undertaking decided to provide new installations both at this exchange point and at Port Bou-Cerbère, on the line to Barcelona, at at the eastern end of the Pyrenees. The cost was 6,300,000 pesetas. The Irun-Hendaye installation was opened in May, 1950, and that at Port Bou-Cerbère in 1951. Agencies were established in Spain and eight other countries to foster and regulate the traffic; those at the frontier points were entrusted with the supervision of the axle changing and other details essential to smooth handling of the vehicles. Although the problem might appear relatively simple of solution much time and money had to be expended before all the difficulties were overcome. Many of the wagons are built to the British loading gauge.

The service began in 1950 with 30 wagons of the 312 intended to be built, and the first through train of 15 wagons for Bordeaux and Paris passed the frontier on May 15. Changing the axles took 4 hr. Trouble with bearings resulted in certain minor changes in design and temporary suspension of traffic. By January, 1951, the time for changing axles was reduced to 2 hr. Thereafter the service developed satisfactorily. While circumstances caused attention to be directed in the first place to the route through Irun, steps were taken to develop that through Port Bou, soon working equally well and handling more particularly traffic with Germany; this transit point has become the more important.

Although introduced for handling consignments of oranges, it was seen that such a service would be valuable for other traffic, such as apricots and peaches, and would enable London markets to be reached by the Channel wagon ferry. In June, 1951, the first consignment of apricots left a station in Spain and was discharged in perfect condition in London four days later. Other items can be carried outside the orange season and in 1951, 80 wagons of grapes were brought over the ferry, but for grapes the service is perhaps less attractive than for other fruits more subject to deterioration in transit.

The heaviest consignments from Spain to Great Britain apart from oranges have been in apricots and grapes, as also to Germany, where the grape tonnage has been particularly heavy. Smaller amounts of other fruits also were handled. In 1952, 1,000 wagonloads of oranges were carried in the special vehicles, and in 1953 2,600, the greater part by the Cerbère route. In the 1952-53 season this traffic represented 11 per cent. of the total rail traffic in oranges throughout Spain. In addition, traffic has been gained from sea transport. The apricot traffic, valuable as coming when the orange is out of season, may be said to have been saved by the institution of through running, and it is believed that, in the local difficulties operating in 1952, the British market could not have been held without it. This traffic is carried exclusively in refrigerated stock in complete trains taking 98 hr. from the main collecting point in Spain to London. Competition from sea routes remains formidable and a progressive railway policy is essential to continued success. Frosts early this year seriously affected the orange crop.

Return loading presents difficulties, some connected with Customs regulations. A temporary relaxation was obtained, however, and in 1953, 335 return through wagons carried freight into Spain, mostly road motor vehicles, and it is hoped to develop the service further.

XUM

LETTERS TO THE EDITOR

(The Editor is not responsible for opinions of correspondents)

Timber, Steel or Concrete Sleepers

July 30

SIR,—The interesting editorial article "Timber, Steel or Concrete Sleepers?" in your issue of July 30 states: "The concrete sleeper, though it would appear to outlive its wooden competitor as a rule, is heavier and generally more difficult to handle." While agreeing with the second part of this sentence, I should be interested to know what examples there are in this country of concrete sleepers which have outlived the average wooden sleeper.

With regard to the statement that British Railways are laying large numbers of pre-stressed concrete sleepers your readers might be interested in the following table showing the comparative numbers of wood and concrete sleepers laid in the last three years:—

	1951	1952	1953
Wood	3,748,000	3,781,000	3,956,000
Concrete	356,000	304,000	256,000

Yours faithfully,

P. L. MONEY,
Deputy Director

iTimber Development Association Limited,
21, College Hill, E.C.4.

Anglo-Continental Traffic

July 28

SIR,—Earlier this year I suggested in a letter published in your issue of April 9, that British Railways should look to their Continental services if they wanted to retain their traffic in competition with other means of transport, and I urged consideration of operating through services to the Channel ports as one means of retaining the attraction of surface travel. Otherwise I foresaw an increasing transfer to air by travellers from those main centres whence direct air services are now being operated to the Continent, with the loss mainly occurring among the higher fare paying passengers.

Your editorial comment on my letter expressed the view that there was not sufficient demand for through trains from Central and Northern England and Scotland to Dover or other Channel ports to justify special workings. I wonder, however, if you are still of this opinion since the announcement last week that a British air transport group has completed plans to introduce combined motor-coach-air services to the Continent. [Recorded on page 133 of our July 30 issue.—ED., *R.G.*] These services are described as designed to appeal particularly to that section of the public which has formerly used rail and sea transport facilities.

The intention obviously is to give the intending traveller the impression that by this means of travel, which is likely to cost little over present third class rail and sea fares, all the incidental problems of such a journey will be eliminated as far as possible, with the example of the air lines in the way of personal service followed to the fullest extent.

Nobody sceptical of the success of these intended services can ignore the remarkable growth of the Channel air car ferries, which this week, according to Press reports, reached a peak in operating 222 flights in one day.

If British Railways expect a "demand" from the travelling public for improved services to the Continent, I submit that they will wait in vain, and that the traffic will go to those operators who anticipate public demand and who offer attractive facilities. I am convinced that unless British Railways adopt a fresh policy soon for their Channel services and make use of the undoubted advantages which they can offer but have so far failed to do, then their share of the total traffic will decline drastically.

I have travelled in two Continental boat trains this week, which should be a peak one just before the August Bank Holiday. In both directions I was the only first class traveller, and the number of second class in either direction was less than 10. The trains in each case were of 12 coaches.

Yours faithfully,

MONTCLER

The North Eastern Railway

July 31

SIR,—The editorial article in your issue of July 30 is of great interest. Some correction, however, is needed. I think that over 60 years before grouping in 1923, there were in all five, not three, locomotive superintendents on the old North Eastern. Beginning with Edward Fletcher, the following held office: A. Macdonnell. T. W. Worsdell, Wilson Worsdell, and Sir Vincent Raven.

T. W. Worsdell was well known for his two-cylinder compounds, while his brother Wilson Worsdell introduced the first 4-6-0 engines to be built expressly for passenger services, and later constructed his large Atlantics, class "V" of 1903. This Wilson Worsdell design was later modified by being fitted with three cylinders by Sir Vincent Raven, and thus became the famous class "Z" of 1911.

Yours faithfully,

E. C. POULTNEY

66, Eton Rise, N.W.3

Passenger Timetables and Rolling Stock

July 28

SIR,—Mr. Semmens' letter in your issue of July 16 shows him to be deficient in understanding of the principles and methods of the management of the Southern Railway. The genius of that railway lay pre-eminently in extracting the last drop of value from every penny it spent and the public testified to its success by flocking to the railway in their millions and making it uniquely prosperous among its contemporaries.

One aspect of the Southern Railway policy was a stern refusal to over-equip the electrical system in the way that seems so popular elsewhere. It was not dazzled by the prospect of saving perhaps one minute in 10—which is about as much as could be achieved in the jungle of speed restrictions making up the Southern Electric territory—at the expense of virtually doubling the cost of the equipment. That is just as well, because if it had been, the route mileage which it would have been able to electrify profitably in such conditions would have been more like 70 than 700.

Railway and public alike would then have been the poorer, apart from the favoured few, who found themselves with, on the average, five more minutes a day to devote to whatever end they thought profitable.

There is no more justification now for squandering money than there was then, because someone—frequently those same folk who think they are getting something for nothing—has to pay in the end.

In the same issue of your journal it is reported that the latest New York, New Haven & Hartford suburban cars with every axle motored cost $173,000 each, more than the cost of a whole Southern four-car unit with the same number of motors and a not greatly inferior service performance. It is small wonder, if this is typical, that the American railways find passenger traffic so unprofitable as to impel them to withdraw the service wherever they can.

Yours faithfully,

T. R. HUME

62, Long Elmes, Harrow Weald, Middlesex.

THE SCRAP HEAP

Ministers of Transport

J. A. Boyd-Carpenter*	1954
Sir Eric Geddes ..	1919-1921
Viscount Peel ..	1921-1922
Earl of Crawford ..	1922
Sir John Baird ..	1922-1924
Harry Gosling ..	1924
Wilfred Ashley ..	1924-1929
Herbert Morrison ..	1929-1931
P. J. Pybus ..	1931-1933
Hon. Oliver Stanley	1933-1934
L. Hore Belisha ..	1934-1937
E. Leslie Burgin ..	1937-1939
Captain Euan Wallace	1939-1940
Sir John Reith ..	1940
Lt.-Colonel J. T. C. Moore-Brabazon	1940-1941
Lord Leathers ..	1941-1945
Alfred Barnes ..	1945-1951
J. S. Maclay* ..	1951-1952
Alan Lennox-Boyd*	1952-1954

*Minister of Transport & Civil Aviation

On formation of the Conservative Government in 1951, Lord Leathers was appointed Secretary of State for the Co-ordination of Transport, Fuel & Power. No successor was appointed on his retirement in September, 1953.

A Long-lived 4-6-0 Class

Mr. J. R. Buckland, of Melbourne, writes that the New South Wales Railways still use on secondary main-line duties all 191 locomotives of the "C 32" class 4-6-0s, of Beyer Peacock design and dating from 1891. In contrast the once ubiquitous and newer "A 2" class 4-6-0s of the Victorian Railways are fast disappearing, 104 having been scrapped of the total of 185.

Engines in Stone

Our correspondent, Mr. William B. Stocks, whose photograph of the stone carving of a locomotive and train was reproduced in our June 18 issue, has sent us the photograph reproduced below of a carved stone locomotive on a gravestone in Kirkheaton Cemetery, also near Huddersfield. It bears the date 1909 and apparently is a close copy of an L.N.W.R. 4-4-0 express locomotive. There is no clue why this subject was chosen.

There are thus at least four carved stone locomotives in the Huddersfield district, including those at Berry Brow Station, which we have also illustrated.

Desirable Residence

(Winning entry in a "Church Times" competition for an advertisement of a (Southern Region?) coach to let by British Railways at Clapham)

Imposing green and yellow 1st-class residence in much-visited position; lively neighbourhood, delightful for children, near good training centre, situate on high level, attractive elevation. 6 compact rooms, furnished with mirrors, sunblinds and unique wall-pictures. Long, light hall. Easy walk Underground and main line. Has been most popular habitat, recently all owner-occupiers. Architect designed Georgian (VI) period, but eminently suitable modern family life and alternative TV programmes.

Urgent Sale to clear line.

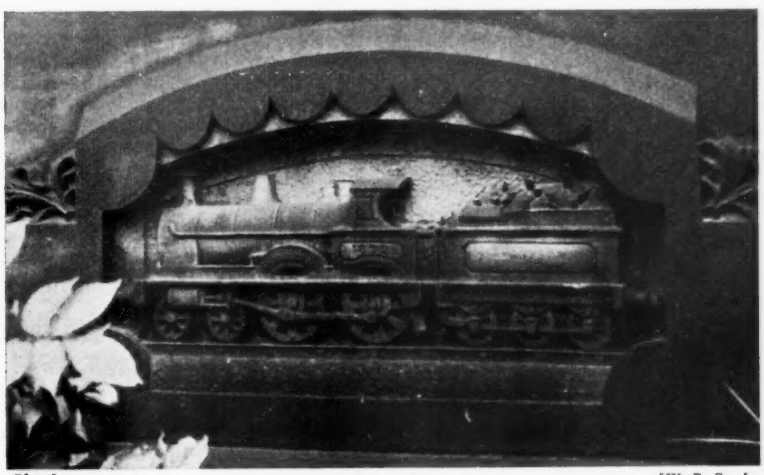
Looking Again at Railways

Work has begun on repainting the interior of the great roof of St. Pancras station and restoring to freshness the brick and stonework of the walls that both support the roof and enclose the passengers' circulating area. The London Midland Region is to spend £25,000 in this endeavour to make the station "brighter and lighter," and expect the job to be completed by the end of the year.

The cleaning and repainting of the roof, walls, and arches may draw fresh attention to the fact that critics are beginning to turn their eyes—as recent writings by Mr. Christian Barman and others have shown—to the æsthetic contribution which the railways make, in one way or another, to the appearance of both town and country in Britain. . .

The strictly architectural contribution of railway stations is harder to judge. So many of them are sited so poorly . . . that the eye scarcely takes them in æsthetically at all. And when a big station really is effectively placed—an integral part of the city, as at Newcastle, or, as at York, alongside pleasant lawns outside the city walls—the sight comes as an agreeable shock, quite apart from the artistic merits of the building. . . . Many of them were much admired when they were built, and later fell into disgrace; now some of them are coming back into favour. Hardwick's arch at Euston is greatly praised. Sir Gilbert Scott's hotel block at St. Pancras is no longer scoffed at merely because it is an elaborate piece of picturesque mid-Victorian Gothic.

It would be instructive if considered opinions about—let us say—Waterloo Station, which is just old enough to be moving into a period of adverse criticism, could be recorded at ten-year intervals for a century. But the upshot might teach us a good deal more about architectural taste than about railway architecture itself.—*From "The Times."*



Photo] [*W. B. Stocks*

Locomotive carved on gravestone at Kirkheaton near Huddersfield, apparently a L.N.W.R. Webb compound

New Forest Echoes

Here in the Forest change is slow,
Old customs linger on,
Linking the present with the past
In ways I thought were gone.
They say the little country lines
Can't possibly survive,
But, here among the Forest folk,
They're very much alive.

The distant main-line mastodons
Don't mean a thing to us,
Asthmatic diesels, crackle-pots,
May snort and sniff and fuss,
But, down here, quiet little trains
Puff bravely to and fro,
As, when on sterner business bent,
Not very long ago.

When morning comes to Brockenhurst
Shakespeare's immortal phrase
About unwilling schoolboys seems
Out-dated nowadays,
As, one by one, the Forest trains
Come in from far and wide,
Decant their loads of laughing youth
And puff away in pride.

From Ringwood, Totton, Christchurch Town,
Lyndhurst and Lymington,
These little, understanding trains
Sedately carry on.
Maybe their somewhat vintage stock
Has had a longish spell,
But, still they serve Young England
And they do it jolly well.

A. B.

XUM

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

VICTORIA

Traffic to Yallourn

The Yallourn Marshalling Yard Junction signalbox is now in service and two-way traffic in operation over the Moe-Yallourn direct line. Down (empty) trains to Yallourn work beyond Moe by whichever route is the more expedient, but mostly via the direct line, particularly empty trains bound for North Yallourn open cut.

New Rolling Stock

The first of 50 top-bunker four-wheel refrigerator vans have been turned out of Newport Workshops. They are all-steel and of 15 tons capacity.

AUSTRALIA

Commonwealth Railway Diesels

On June 12 the first of the 14 new Sulzer-Birmingham 955 h.p. diesel-electric locomotives of the Commonwealth Railways was introduced. It made a special trip from Port Augusta to Bookaloo and back, a round trip of 118 miles, with a load of 372 tons. Senator George McCleay, Federal Minister of Shipping & Transport was present, and Mrs. McCleay performed the inaugural ceremony. The demonstration trip and subsequent dinner were attended by 85 guests, including Messrs. P. J. Hannaberry, Commissioner of Railways, and J. Heath, Assistant Commissioner, R. M. Atkinson, managing director of Sulzer Bros. (London) Ltd., T. R. Scales, of Kelly & Lewis Limited, C. H. Fidock, Secretary, South Australian Railways, and K. A. Smith, Chief Mechanical Engineer, Commonwealth Railways.

The first locomotive delivered began to operate on the 3-ft. 6-in. gauge Central Australia line two days after assembly at Port Augusta. The second unit was put on two of the standard-gauge bogies supplied as part of the order, for the above demonstration trip on the Trans-Australian Railway, and for testing on that route. More of the remaining 12 locomotives have now been delivered and are being put to work on the Central Australia line.

INDIA

Locomotives under Aid Programme

The Deputy Minister for Railways & Transport has said that 120 locomotives from Canada are expected to be delivered by December, 1955, under the Colombo Plan. In addition, negotiations are in progress to obtain locomotives under the Technical Co-operation Aid Programme of the United States of America. So far 316 "WP" locomotives have been purchased at an average cost of Rs. 4·89 lakhs per locomotive.

Bhagalpur-Mandar Hill Line

In April, the 5-ft. 6-in. gauge 32-mile branch line from Bhagalpur—on the Eastern Railway Loop Line—to Mandar Hill was formally reopened for traffic by Shri Tal Bahadur Sharbri, Minister for Railways & Transport. It was first dismantled in 1914 to provide materials for strategic overseas railways, was restored in 1926-27, and again taken up for the same reasons as previously in October, 1941. As it exists at present this branch is of no special importance, but there is a plan to extend it southwards via Dumkato either Ondal or Suri. It will then open up a considerable backward area at present untapped by railway.

The line has been relaid on the old alignment, but considerable repairs to the formation were necessary and new steel spans had to be provided for the 15 girder bridges; the spans vary in length from 12 ft. to 30 ft. and number 65 in all. Additional staff quarters were also required. Altogether the cost of restoration was Rs 61 lakhs (£457,500) though the original construction in 1911 is stated to have cost only Rs. 24 lakhs (£180,000). Before dismantling in 1941 this branch carried some 250,000 passengers and 14,800 tons of goods annually.

Western Bengal Electrification

The Government has sanctioned the expenditure of Rs. 118,570,000 on the electrification of the former East Indian Railway between Calcutta (Howrah) and Burdwan via Bandel, 66 miles, and the branch from Sheoraphuli to Tharakeshwar, 22 miles.

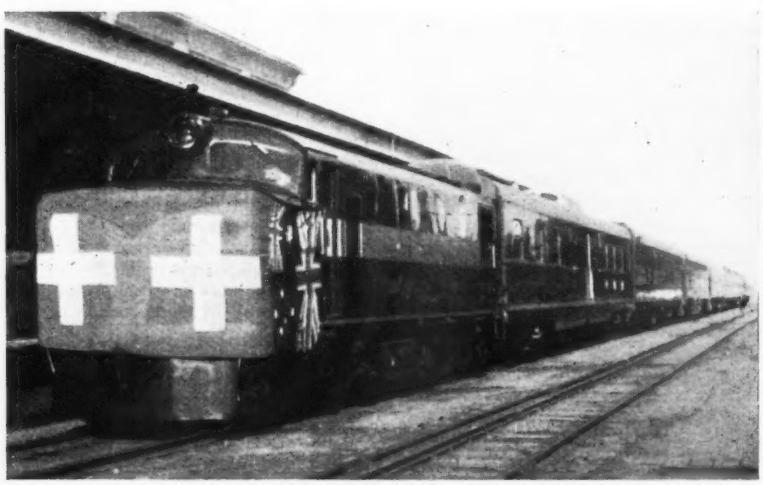
CEYLON

Pilgrim Traffic

The railway has introduced co-ordinated road-rail seasonal services at the centres of pilgrimage for the conveyance of pilgrims and their luggage by road from and to the railhead stations.

Cheap return tickets for pilgrims travelling third class at 1½ single fare for the double journey are issued for the major religious festivals from all stations distant fifty miles or more. On the outward journey, these tickets can be used to the station named only, but on the return journey pilgrims can detrain at any station short of destination, surrendering the return portion of the ticket. These cheap tickets are not available for break of journey and no refunds are allowed on unused return halves.

Pilgrim traffic has been on the decline but it is expected that the issue of these concessionary tickets will induce larger numbers to travel by train.



The first of the Sulzer-Birmingham diesel-electric locomotives of the Commonwealth Railways, Australia, about to leave Port Augusta with a special train on the Trans-Australian Railway

PERU

Tambo del Sol-Pucallpa Railway

The Tambo del Sol - Pucallpa Railway, begun in 1950, will link the existing Central and Cerro de Pasco Railways, connecting the port of Callao and the capital, Lima, with the rich mining and agricultural regions of the central sierra and the navigable waters of the Ucayali River, one of the greatest tributaries of the Upper Amazon.

The line, of standard gauge railway, approximately 300 miles in length, will start at Tambo del Sol Station on the Cerro de Pasco Railway, 57 miles from the smelter site of the Cerro de Pasco Copper Corporation at Oroya (junction of the Cerro de Pasco and the Central Railways). The terminus will be the river port of Pucallpa, on the Ucayali,

553 nautical miles from Iquitos, the Peruvian trading centre of the Upper Amazon, 2,024 nautical miles from the point where this river empties into the Atlantic. River vessels of 3,000 tons burden can ascend the Amazon and Ucayali as far as Pucallpa.

Some 30 miles of earthworks have been completed in the Andes, where it was necessary to construct 15 tunnels of an aggregate length of 1·9 miles; the longest of 1,055 yd. at a height of 13,365 ft. above sea level. Construction proceeds slowly over the Andes plateau but work has begun at the Pucallpa end. A contract has been signed with the American firm of R. G. Le Tourneau. This company will construct 31 miles of roadbed, and in exchange the Peruvian Government will grant large tracts of forest for colonisation.

The construction of the railway is in the hands of the General Directorate of Railways of the Ministry of Public Works.

UNITED STATES

Exchanging Diesels

An interesting exchange plan is in operation between the Bangor & Aroostook and the Pennsylvania Railroads whereby ten of the B. & A. road-shunting diesel units which find full use only during the winter season, when the movement of potatoes in New England is heavy, transfer from May to November to the Pennsylvania Railroad, for shunting in the ore docks at Erie, Pa. The latter also is a seasonal traffic, which comes to an end during the winter months because of the freezing of the Great Lakes. Hire charges are paid by the P.RR., which also maintains the diesels while they are on loan, and up to the present the working out of the seven-year contract between the two companies has been completely successful, and has made possible substantial economies.

To cope with its maximum winter potato traffic, the Bangor & Aroostook is also hiring six diesel units from the New York, New Haven & Hartford Railroad for the short period necessary, and in this way it no longer has to retain steam locomotives in store merely to handle traffic during the winter rush period.

N.Y.C. Passenger Traffic

The New York Central System is one of the few in the United States on which passenger revenue exceeds 20 per cent of total revenue from all sources; in 1953 the figure was 22½ per cent. As a result of research initiated by the present President Mr. William White, the loss on passenger traffic during the second half of 1953 was down by $750,000, as compared with the corresponding months of 1952.

The changeover from steam to diesel power has permitted an increase in the length of trains, so that certain trains which previously operated independently are now combined; by abandoning many lightly patronised secondary and branch services, the company has reduced train-miles by 10 per cent and coach-miles by 6·7 per cent. More intensive use of dining cars has made it possible to cut the active dining fleet from 242 to 169 in no more than two years. Closer control of seat reservation has eliminated much empty seat mileage, and improved maintenance has reduced by 8 per cent the number of coaches requiring attention in the shops.

Train acceleration and a substantial improvement in timekeeping have played their part in making the train services more attractive. The family fares plan is computed to have brought in over $1,000,000 of new business in 1953, as well as prompting a large number of enquiries which resulted in other profitable lines of business.

FRANCE

Road Vehicles through Mont Cenis

Accompanied motorcycles and motor-scooters are now conveyed by rail between Modane and Bardonnecchia through the Mont Cenis Tunnel. The charges are 800 fr. for a motorcycle or scooter, and 95 fr. for the transport of each passenger travelling with the vehicle. The charge for the transport of a car is 2,000 fr. plus 95 for each passenger travelling with the car. A frequent service of shuttle trains runs between Modane and Bardonnecchia from 8.40 a.m. to 6.40 p.m.

Diesel Working on Light Railway

The operation of the Tarn metre-gauge local railway between Castres, Lacaune-les-Bains and Murat-sur-Vèbre has recently changed hands, and considerable improvements in service are to be made as a result of the exclusive use of diesel railcars. The average timetable speed of passenger trains is to be increased to 25 m.p.h., a most satisfactory figure in view of the tortuous nature of the line.

In addition to the use of railcars for the conveyance of passengers, it is also proposed to operate special railcars for the conveyance of smalls traffic. Tickets will be issued to passengers on the railcar; parcels traffic will be handled by agents remunerated on a commission basis. This will enable some stations to be closed and considerable economies to be made in station staff.

Rehabilitation Centre at Vitry

Since 1950 the S.N.C.F. has been developing at the Vitry-sur-Seine Workshops a centre designed to rehabilitate, into their previous trades, workshop staff who have been the victims of accidents. The development of the centre has been under the direction of the Chief Medical Officer of the South-West Region and has been based on the system evolved by the Vauxhall and Austin motorcar companies in this country. The centre was officially inaugurated by Monsieur Louis Armand, General Manager of the S.N.C.F., on May 13, but it has been in use on an experimental basis since the end of 1952.

All the machines in use can be adapted to meet the specific needs and physical limitations of individuals; the intention is not to train staff for a new trade, but to fit them to continue their former activities. Injured railwaymen are sent to the rehabilitation centre on the recommendation of the surgeon if he considers the cases suitable for treatment. Individuals who have suffered serious amputations cannot be considered suitable. There is constant medical supervision and it is the intention that normal hours of work should be maintained; facilities for personnel to rest are provided and no standard output of work is expected. Everything produced is for a specific and useful purpose, and a high standard of workmanship is called for.

At present 16 machines are in use and four more will be available soon. So far, every injured workman taking a course at Vitry has returned subsequently to his former position.

WESTERN GERMANY

Extension of Berlin Underground

Work is in progress on the extension of Route "C" of the Berlin underground railways beyond Seestrasse to Tegel, a northern suburb. The line, which follows an important arterial road, was originally planned to be built in a cut-and-cover tunnel throughout, but to avoid endangering the water supply of the suburb of Reinickendorf, the plans have been modified so that a section will be built on embankment. Meanwhile, the structure of the first part of the tunnel section has been completed, and work on the second part has begun.

New Cement Containers

The German Federal Railway is carrying out trials with a new type of container which facilitates the direct transport of bulk cement from the factory direct to the building sites, without transhipment en route. Two containers of 2½ ton capacity each form a unit, and three such units, with a total capacity of 15 tons of cement, are loaded on one platform wagon which is worked to the railhead station nearest to the building site. A specially-designed road vehicle then takes the containers direct from the station to the concrete mixer.

JUGOSLAVIA

New Railways in Macedonia

Three standard-gauge lines have been opened recently in Macedonia. The longest, 18½ miles, branches at Bakarno Gumno from the Titovo Veles—Prilep—Bitola—Kremenica line which continues over the Greek border to Florina and eastward to Salonica. It leads in a north-westwards direction to Sapotnica, skirting the Crna river. The other two lines are local lines serving the industrial districts of Titovo Veles.

XUM

Locomotive Cylinder Performance—2*

Uniform turning moment obtained with three-cylinder type engines

By E. C. Poultney, O.B.E.

THE considerable differences seen in the mean pressures in the cylinders of these two engines draw attention to steam port openings to admission in relation to piston areas. For the purpose of this comparison, data have been prepared and are given in Table 3. This information includes the port openings to admission at each of the different rates of cut-off considered and the areas through the valve liners expressed as a percentage of the piston area, the valve openings at each cut-off being equal for each engine, though admission areas in the case of the class "4" locomotives are less and are assumed to be proportional to the valve sizes, which are 11 in. and 10 in. diameter for the class "7" and class "4" engines respectively.

TABLE No. 3

Cut off per cent	British Railways, Class "7" Cylinders, 20 in. by 28 in. Piston Valves, 11 in. dia. Max. Valve travel 7¾ in. Lead ¼ in. Lap 1 1/16 in.			L.M.R., Class "4" Cylinders, 17½ in. by 26 in. Piston Valves, 10 in. dia. Max valve travel 6 7/16 in. Lead ¼ in. Lap 1⅛ in.		
	Port Opening (Admission)			Port Opening (Admission)		
	In.	Area sq. in.	Per cent of Piston Area	In.	Area sq. in.	Per cent of Piston Area
15	0·288	7·25	2·31	0·296	6·6	2·75
20	0·335	8·4	2·7	0·335	7·7	3·19
25	0·390	9·79	3·11	0·390	8·9	3·68
30	0·460	11·58	3·67	0·460	10·5	4·36

In making this assumption, it is taken that the ratio of the areas of the bridges in the valve liners to the areas of the passage ways is the same in each case. As shown by the values given in the table, the port openings to admission in relation to the area of the pistons are 20 per cent greater for the class "4" compared with the class "7" engine, while, from Fig. 2, it will be seen that for equal working pressures and at given rotational speeds and cut-offs, the mean pressures developed in the cylinders would be substantially higher than for the class "7" engine, thus forcibly directing attention to the value of large port openings to admission steam.

Examination of the port openings shown also brings out the fact that at all rates of cut-off "lead" opening forms a very large proportion of total opening; for instance, at 15 per cent cut-off the "lead" opening of 0·25 in. is 86 per cent of the total and at 25 per cent cut-off this ratio is 64 per cent. In other words, with valves and valve gears commonly used, "lead" openings are the ruling factor in cylinder performance.

The advantages offered by long lap valves, so far as improving exhaust port openings are concerned, cannot be disputed; but the fact that "lead" opening at the earlier rates of cut-off forms so large a proportion of the port openings obtainable to admission seems to show that modern valve gears of the type in general use have done little to advance cylinder power output required in the higher range of rotational speeds of the driving wheels.

The comparative particulars in Table 3 bring out the fact that the class "7" engine with 11 in. valves should have piston valves of about 13·25 in. dia. to give port opening areas to admission steam in relation to piston areas equal to that obtained by the class "4" engine, if the larger cylinders are to develop the same power in proportion to their dimensions. The curves of mean pressures show clearly the effect of speed on the pressures that can be maintained in the cylinders and direct attention to the desirability of improving admission port openings and valve events with a view to raising mean pressures acting on the pistons, especially at the higher ranges of speed.

Multi-Cylinder Locomotives

The graphs showing the mean effective pressures obtainable with modern piston valves and actuating gear show amongst other things, why engines with three or four cylinders have been introduced for operating heavy high-speed trains. The futility of employing superheated steam at high pressure unless cylinders and valve gears are designed to make the most economical use of increased steam pressures has often been emphasised; with normal valves and gears, however, the only practical way of achieving this is by raising the value of the engine constant, thus increasing the tractive force per lb. of mean effective pressure at early rates of cut-off.

Total cylinder volumes have, therefore, been augmented by multiplying the number of cylinders. This has in turn facilitated the use of smaller cylinders which, with relatively larger valves, has resulted, as Fig. 2 seems to show, in some improvement in the mean pressures realised at the shorter rates of cut-off.

In other words, it has been found necessary in practice to increase cylinder volumes or, in other words, the value of the engine constant in order to obtain the powers required with the low mean pressure generally available with present valves and valve gears, with the result that engines have been over-cylindered with respect to the weight on the coupled wheels, thus reducing the adhesive factor.

Locomotives of the three-cylinder type are, therefore, possibly an improvement on those having four cylinders on account of the more uniform turning moment obtained, though, at starting, enginemen always seem to quickly reduce the rate of cut-off to obviate slipping, as they do also with four-cylinder engines which are over-cylindered with respect to adhesive weight.

Some particulars of recent examples of high-powered three and four-cylinder engines will illustrate the foregoing remarks and this information will be found in Table No. 4. The values of the engine constant are seen to have changed with modifications in the ratios of cylinder dia. and valve sizes in conjunction with boiler working pressures, the two latter features taken together tending to improve the value Pm, thus increasing power output at the higher speeds. The particulars given relating to the L.N.E.R. (Eastern and North Eastern Regions) original class "A1," "A3," and "A4" Pacifics afford instructive examples of this development.

Considering, for instance, the original "A1," having 20-in. cylinders, the engine constant had a value of 196 for the tractive force per lb. of mean effective pressure Pm acting in the cylinders, while on the other hand mean pressures would be relatively low, partly because of the low working pressure and the small valves in relation to the size of the cylinders.

In the "A4" design, the engine constant is reduced in value to 168, but the higher working pressure of 250 lb. per sq. in. in conjunction with much larger valves in proportion to the cylinder dimensions would no doubt considerably improve cylinder performance at high speeds. Thus greater powers would be developed in proportion to the size of the cylinders.

With these Pacifics, the valve setting differed from that commonly used, in that the full gear cut-off was 65 per cent, which would have a favourable effect on port openings to admission at early cut-offs, thus tending to off-set the effect of the relatively small valves used, particularly for the "A1" and "A3" classes.

* Part 1 appeared in our issue of July 30, 1954.

TABLE 4.—DIMENSIONS OF MODERN LOCOMOTIVES
(Three- and Four-cylinder Types)

Designation	Cylinder and driving wheel dimensions (in.)	Valve dia. (in.)	Cyl. dia. / valve dia.	Boiler press (lb. per sq. in.)	Engine constant	Rated tractive force (lb.)	Weights (lb.)		Factor of adhesion
							Engine	Adhesive	
L.N.E.R. "A1"	3 at 20 × 26/80	8	50	180	196	29,835	207,088	134,400	4·5
,, "A3"	3 at 19 × 26/80	8	45·1	220	176	32,909	215,600	148,176	4·5
,, "A4"	3 at 18½ × 26/80	9	38·1	250	168	35,455	230,608	147,840	4·16
,, "A1" (1948)	3 at 19 × 26/80	10	36·1	250	176	37,397	233,184	147,840	3·96
L.M.S. "Duchess"	4 at 16½ × 28/81	9	30·2	250	188	40,000	235,760	151,648	3·76
,, "Princess"	4 at 16½ × 28/78	8	33·0	250	190	40,300	234,080	151,200	3·74
G.W.R. "King"	4 at 16½ × 28/78	9	29·3	250	190	40,300	199,360	151,200	3·74
S.R. "Merchant Navy"	3 at 18 × 24/74	11	29·4	280	158	37,500	212,240	141,120	3·77

Four-cylinder engines might have had a similar valve setting with advantage and a large four-cylinder Pacific proposed, but not built, might well have had a similar valve setting, acting on suggestions put forward by the present writer.

Relatively small improvements made in admission port openings give quite important results, a case in point being the "converted" "Royal Scot" class of the L.M.S.R., where increasing the "lead" opening from $\frac{1}{4}$ in. to $\frac{5}{16}$ in., or 25 per cent, is held to have materially improved performance. In this case, however, steam pipes were enlarged, though it is hard to assess the value of this modification, because any steam pipes of a size likely to be fitted have a cross-section considerably more than that available through piston valve liners, particularly when cut-offs are reduced to 15 or 25 per cent.

(To be continued)

Centralised Traffic Control in Rhodesia and New Zealand

Westinghouse installations to cover some 95 miles of single line

OF the two contracts placed with the Westinghouse Brake & Signal Co. Ltd. for the supply of centralised traffic control apparatus to Rhodesia and New Zealand, recorded in our July 16 issue, the installation in Rhodesia will cover some 85 miles of single track, with 15 fully-signalled crossing stations, and will be controlled by Westinghouse two-wire, time-coded, C.T.C. from a station at Sawmills, about 60 miles from Bulawayo. Five passing stations are controlled on one side of Sawmills by direct codes and the other ten passing stations on the other side of Sawmills by direct codes for the first five and by superimposed carrier codes for the remainder. The whole section is therefore controlled over only two wires. The use of this carrier control permits both direct and carrier codes to be transmitted simultaneously.

The control machine will be situated at Sawmills and will be of the unit constructed type, each unit being complete with its own storage relays. This form of construction permits additional units to be inserted in their correct geographical position, should additional passing stations be added in the future, by disconnecting the connections on the adjacent units and inserting new units as required. Wire connections are by plug and socket, which are thus readily removed for maintenance or replacement, and all storage and other units are of the plug-in type, the latter having sealed dust-proof cases with glass covers.

The field units at the stations, comprising coding storage, field pyramid, and so on, are of similar construction and the equipment is being supplied complete with full testing apparatus. The wayside relays controlling the local signalling circuits are of the standard Westinghouse plug-in type, and will be supplied complete with pre-wired racks. At each station there are home and outer-home signals of the three-aspect type and starting signals of the two-aspect type, and mounted below the starters are shunting signals of the new Westlyte type. The points will be operated mechanically and electrically released, in accordance with Rhodesian practice.

This installation covers the supply of all the usual signalling and C.T.C. equipment, cable, and accessories, but does not include open line wires nor petrol generator sets, one each of which will be provided by the railway at each station, as there is no power supply available in the district.

The equipment for the Upper Hutt-Featherston section of the New Zealand Railways will be similar to that supplied to Rhodesia. The section is some ten miles in length and has three crossing stations; no carrier control is thus needed and the control will be of the direct two-wire coded type. The wayside equipment is being supplied by the New Zealand Railways.

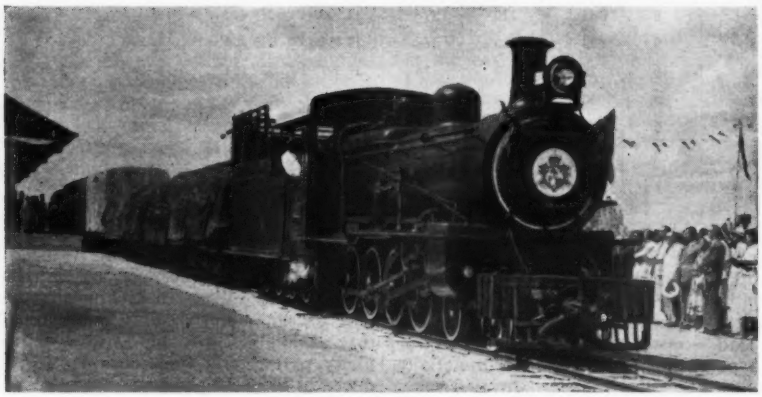
FILM ON MECHANICAL HANDLING.—A film depicting mechanical handling and ancillary equipment as an aid to reducing costs in industry was shown at Unilever House, Blackfriars, London, E.C.4, on July 28. A special feature of the film, which is entitled "Time, Space, and Effort" and runs for 25 min., is the use of unit boards and pallets in conjunction with fork trucks for transporting and stacking varied types of materials such as cartons, rolls of paper weighing one ton, oil and paint drums, and so on. Ways are demonstrated in which much laborious or unpleasant manual handling can be eliminated. Production was made possible by the collaboration of the British Transport Commission, Imperial Chemical Industries Limited, Shell-Mex and B.P. Limited, and Vauxhall Motors Limited. The film is available on loan in 35 or 16 mm. sizes on application to Unilever Limited, Information Division, Unilever House, London E.C.4.

THROUGH BOOKINGS FROM LONDON TRANSPORT STATIONS TO SOUTHEND.—As from July 31 and until October 31, cheap day through tickets to Southend are bookable at London Transport Underground stations. They are issued by arrangement with British Railways, Eastern Region, and are available daily, including Sundays, by any Underground train. Passengers in most cases can change from the Underground to the main-line stations serving Southend at Liverpool Street, for Southend Victoria, or at Tower Hill, for Fenchurch Street trains to Southend Central; they may return from Southend that same day via either Liverpool Street or Fenchurch Street and travel to any London Transport station within the availability of their tickets. Passengers booking at Underground stations in eastern districts of London travel to Southend via Stratford, for Southend Victoria, or via District Line stations to Upminster, where trains for Southend Central stop.

XUM

Southern Province Railway and Port, Tanganyika

A 132-mile line serving the new deep-water port of Mtwara on the Indian Ocean



Inaugural train entering port area on July 17

MTWARA, the new port serving the Southern Province of Tanganyika, had its origin in the Overseas Food Corporation's Groundnut Scheme. Construction was begun in 1948 to provide a deep-water berth to export an estimated 400,000-ton annual crop of groundnuts. Mtwara was chosen as the most suitable site for a port in preference to the already existing port of Lindi, the nearest outlet to the sea from the proposed groundnut area, because the physical characteristics of Lindi precluded its economic development into a major port. The harbour is situated in a lagoon 4½ miles by 1½ miles. It faces the Indian Ocean some 35 miles north of the Portuguese East African border and 245 miles south of Dar es Salaam.

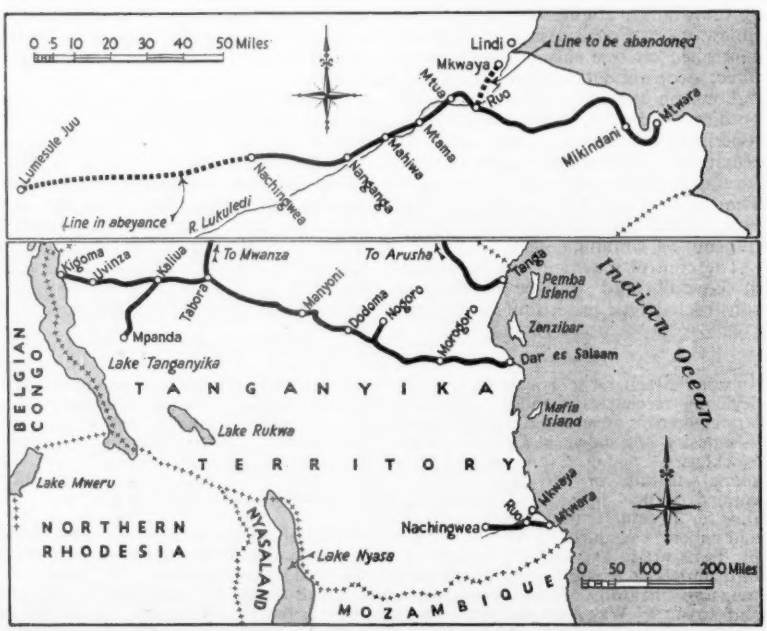
The harbour has a fine entrance through which ships of any draught may enter or leave at any state of the tide, and a naturally protected and spacious anchorage. The immediate adjacent land area is suitable for port and rail installations and for the building of a township.

The Southern Province Railway, 132 miles long, from Mtwara to Nachingwea, passing through Ruo, Mtua, and Mtama, serves an area hitherto untapped by good communications and opens up the possibility of a route to Lake Nyasa and Central Africa. It was planned primarily with the object of evacuating large groundnut crops from the Nachingwea and other areas to the port of Mtwara. Despite the failure of the groundnut scheme the Tanganyika Government's faith in the potential development of the Southern Province remained unshaken, and an agreement was entered into by the Overseas Food Corporation, the Tanganyika Government and the East African Railways & Harbours Administration to provide for the completion of the port and railway and their financing.

To begin with, the railway was built from Mkwaya to Nachingwea via Ruo because, first, it was known that a new port at Mtwara could not be built quickly and, secondly, the route from Mtwara to Ruo, which previously had not been surveyed, was known to present difficulties. All emphasis was on speed of development and the obvious expedient was a railway from Nachingwea to Mkwaya, at the head of the Lindi creek. A detailed German survey for the first 60 miles of this route was available and construction appeared to present no serious difficulties. The then Tanganyika Railways undertook the work at a relatively low standard and wooden sleepers had to be used because steel was not then available. The earthwork was at first done by hand, but mechanical equipment was brought into use by the end of 1948. By that time about 27,000,000 cu. ft. of earthwork had been completed over about 60 miles of the route and the track had been laid in Mkwaya yard and for six miles towards Ruo. The completed line from Mkwaya to Nachingwea, 81 miles, was opened for traffic on October 25, 1949.

Construction Difficulties

The contract for the Mtwara-Ruo link was let to Pauling and Co. Ltd. in 1948, but the work was taken over departmentally by the East African Railways & Harbours in 1950. Work on the Ruo-Mtwara section was difficult. Many bridges, including a 100-ft. span at Mikindani, had to be constructed and cuttings and embankments in unstable soil were troublesome and costly. The work was also delayed by a cyclone in April, 1952, when the heavy rain severely damaged the newly-made formation. The last length of rail was laid in June, 1953, but there remained much consolidating work to be done, and it was not until the port of Mtwara was opened for public business in January last that traffic was accepted over the Ruo-Mtwara section in construction conditions. With the opening



Map showing the course of the new line in relation to the Central and Tanga lines of the East African Railways in Tanganyika

of the Mtwara-Ruo-Nachingwea railway under normal traffic conditions on July 17, measures are being taken to divert traffic from the temporary Ruo-Mkwaya link which will be closed to public traffic on October 1.

Financing the Project

By the agreement between the Overseas Food Corporation, the Tanganyika Government, and the East African Railways & Harbours, the Overseas Food Corporation undertook to finance the construction of the port and railway pending the raising of a loan by the East African Railways & Harbours, and the Overseas Food Corporation and the Tanganyika Government jointly undertook to cover annual working deficits for ten years. An increase in cost of the port and railway from the originally estimated £4,550,000 to about £6,500,000, coupled with a more conservative assessment of traffic possibilities, necessitated in 1953 a review of the agreement. The British Government has proposed to waive repayment of the advances made by the Overseas Food Corporation to the East African Railways & Harbours Administration before April, 1953. These advances total approximately £3,750,000, thus reducing the capital to be found by the East African Railways & Harbours to approximately £2,750,000 (with a corresponding reduction in annual loan service charge of £200,000) so that the charge to East Africa of the port of Mtwara and the Southern Province Railway, instead of being over £6,000,000, will be about £2,750,000.

Port Construction

The contract for the port construction was let to Balfour, Beatty & Co. Ltd., with Messrs. Coode, Vaughan-Lee, Frank and Gwyther as engineering consultants. The completion of the port was originally scheduled for October, 1950, with the first berth already available for shipping 11 months before that. In building the quay wall, some 1,248 ft. long, 50-ton grooved slice blocks were used for the first time. First a shallow trench was cut in the sea bed by dredger; this was then filled with rubble to a depth of 5 ft. On this foundation were laid the 50-ton blocks, of which 1,770 were used. All were made locally, slid down a gradient and floated into position by an ingenious device of two self-locking pontoons.

On January 22, 1954, the first ocean-going vessel to discharge and load general cargo was berthed alongside.

Opening Ceremony

At the opening ceremony on July 17, Major-General W. D. A. Williams, Commissioner for Transport, East Africa, said that it was primarily due to the courage and vision of Sir Edward Twining, Governor of Tanganyika, that the view was taken that the expansion of the economy of the Southern Province did not depend on groundnuts alone, and it was his insistence which led to the continuance of the project in its present form under the Tripartite Agreement of 1951. They should recognise with great gratitude and appreciation the generosity of the British Government which had given them a fine transport system for appreciably less than half its true value.

The first train to leave Mtwara Station, in January, 1954

It was also right, continued Major-General Williams, to give recognition to Mr. A. F. Kirby, his acting predecessor and the present General Manager of the East African Railways & Harbours, to whose most able conduct of the negotiations involved the credit for the generous settlement was largely due.

In the seven years' labour that had been necessary to complete the whole work the engineers had suffered many difficulties and misfortunes and great praise should be given to the consultants, the port contractors, and the construction engineers of the Tanganyika Railways and later the East African Railways & Harbours, who bore the brunt of the railway construction work. On the railways extreme difficulties were encountered; whole sections of the formation were washed away by floods, and conditions were reached where even the mechanical plant failed and manual labour was in the last resort the only way by which the work could be kept going. The most alarming difficulty must have been when on two occasions the whole quay face started to subside and move bodily into the sea. The engineers managed to stop this process and the wharf was now securely tied back.

Major-General Williams hoped to see the railway, in time, continuing into the Southern Highlands, and then in turn connect with the Tanganyika Central Line by a north-south link. To this main arterial system of rail, roads should serve as feeder links.

The port itself was only one link in the overall chain of movement between land and sea, and the practical capacity at present was limited to that of the traffic which could be carried by the Southern Province Railway. By the end of this year the locomotives and rolling stock which would have been

Constructional train on Mtwara-Ruo section

XUM

Bridge being erected on Mtwara-Ruo section

put on the line would be ample to provide for movement at the rate of 100,000 tons a year, but behind this capacity they had freedom to move rolling stock by sea in landing craft, and it need not be feared that the carrying capacity of the railway would lag behind the development of the traffic of the Province.

Sir Edward Twining spoke of the discussion on the future of the port and railway when it became apparent that the groundnut scheme was not going well. A new development plan for the province was produced which formed the basis on which they were now working. The Tanganyika Government agreed to pay for the extension of the railway 75 miles beyond Nachingwea to open up more country and as a pointer to its ultimate destination, Lake Nyasa. The proposals were accepted and the work on the port and railway proceeded. Sir Edward Twining then referred to the financing of the project. The East African Railways & Harbours Administration was forgoing the fixed annual renewal charges, about £95,000 a year, while deficits were experienced, while the Tanganyika Government had agreed to assume responsibility for the whole of the net operating deficits on the re-capitalised structure. Because of the unforeseen expenditure to be met in replacing the wooden sleepers by steel sleepers, it had been decided to defer the extension of the railway beyond Nachingwea and place the capital which had been earmarked for this towards the cost of re-sleepering.

Future of Mtwara

The Government's faith in the future of Mtwara was exemplified by the move of provincial headquarters to the site, and the E.A.R. & H. administration had also moved. The railways were building a central administrative block, locomotive workshops, slipways and a minor dockyard. Sidings were being constructed in the industrial area. Forty-nine commercial plots had been taken up in addition to 27 plots in the industrial area, including a factory for processing cashew nuts.

Sir Edward Twining paid a particular tribute to the East African Railways & Harbours, which, he said, had never been daunted by mishaps and setbacks, but had gone steadily forward with unfailing co-operation. He then declared formally open the port and railway.

Conveyance of Powders in Tank Wagons

Compressed air loading and discharge of specially converted wagons on German Federal Railway

INCREASING road competition and the availability of a certain number of tank wagons induced the German Federal Railway to convert 110 eight-wheel tank wagons for the conveyance of cement and other powdered goods. The wagons were acquired in 1948 from the U.S. Army.

Conversion was effected in railway workshops in co-operation with the firm of Polysius, Neubeckum. Each wagon has a capacity of about 40 *tonnes*. Other features are as under:

Length over buffers	40 ft. 10 in.
Length of loading space	37 ft. 2 in.
Dia. of tank	6 ft. 10 in.
Wheelbase of bogie	5 ft. 6 in.
Tare	20 *tonnes*

Compressed Air Loading and Discharge

The contents are loaded and discharged by compressed air. Consignors and most consignees maintain air compressors for these purposes. Compressors mounted on railway wagons to form mobile discharge plants have been suggested for consignees who do not possess the necessary equipment, but negotiations on this so far have not been concluded.

These wagons hitherto have been used only within Western Germany, including Western Berlin. Swiss firms, however, have also made tests with this type of wagon of which they have a supply on loan, and the Swiss Federal Railways have agreed to movement of this stock over their system, for which special agreement was necessary, as this type of wagon does not fulfil R.I.V. requirements.

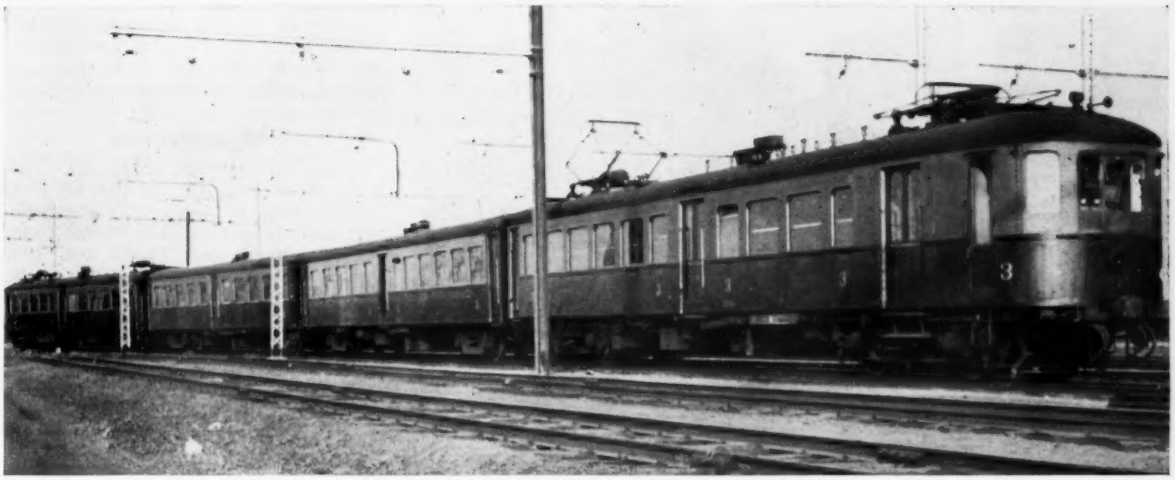
There are also 11 four-wheel tank wagons owned by the German Federal Railway, which also serve for the conveyance of powders. Users have applied for further tank wagons to be constructed by the German Federal Railway, but no decision so far has been made as to this.

Tank wagon converted for conveyance of cement, German Federal Railway

Belgian Electric Rolling Stock

Stages in 20 years development of multiple-unit trains and heavy locomotives on the Belgian National Railways

By F. Baeyens, Ingénieur en chef, Belgian National Railways



Brussels-Antwerp four-car train

THE first main-line electrification of the Belgian National Railways, from Brussels to Antwerp, was opened officially on April 23, 1935. It was on the 3,000-V. d.c. system, and the motive power and rolling stock at the time of opening comprised 12 four-car all-steel trains, each of two motor coaches and two trailers, which began by working 67 trains a day each way. These trains had a seating capacity of 116 second and 246 third class, and standing room for 55, on an empty weight of 238 tons and within a length of 295 ft. They had a top speed of 75 m.p.h.

Twelve of the motor coaches had electro-pneumatic h.t. contactors; the remaining 12 had cam-operated contactors in which the camshaft was driven by an air motor. Train control wires and semi-automatic control by means of acceleration relays permitted of easy driving. The four traction motors on each motor coach were wound for 1,500 volts, and the two in each bogie were permanently connected in series; but the four motors on a motor-coach could be grouped in series and series-parallel, with shunted field in the latter combination. The 1 hr. rating was 265 h.p. to I.E.C. specifications.

Because of the high top speed, the motors were springborne, and drove through a Sécheron flexible drive. To the end of 1952 each of these 12 trains had run about 1,500,000 miles over the 28-mile route despite the disturbed conditions of the war years.

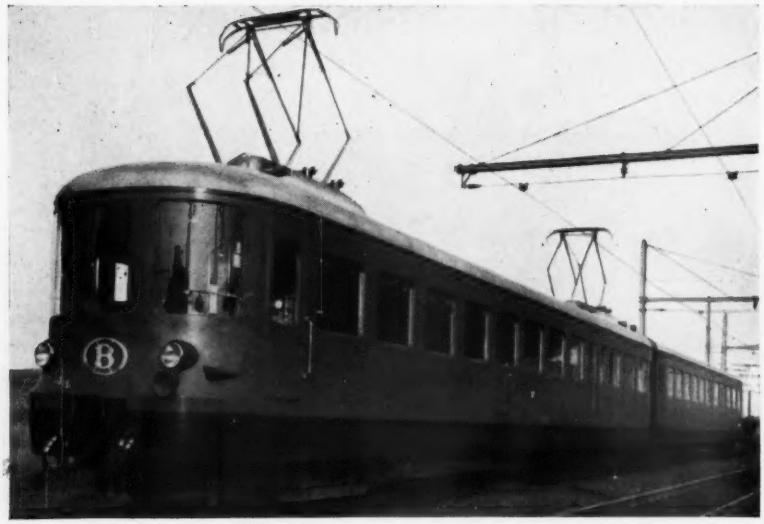
Brussels-Antwerp Local Trains

Soon after the initial electrification it was found necessary to build additional stock, to cater more particularly for local stopping services between Brussels and Antwerp, the 12 original trains being used mainly for interurban working, either non-stop or with one stop at Malines. Therefore eight new all-steel two-car trains were introduced in 1939; and at the same time 16 additional trailer cars were acquired to increase the capacity of the four-car interurban trains.

These two-car local-service sets had 30 second class and 113 third class seats, and standing room for 100, on an empty weight of 108 tons and within a length of 141 ft. They, also, had four of the same 265 h.p. springborne motors, located in the end bogies and geared for a safe top speed of 75 m.p.h., but the motor output on the one-hour rating was 8·45 h.p. per ton of gross weight compared with 7·9 h.p. in the interurban trains. Electro-pneumatic control was retained and the equipment spread over two coaches. Up to the end of 1952 each of these twin-car local sets had run about 1,700,000 km. (1,055,000 miles).

The intention was to use the same type of train on the lines scheduled for electrification under the *Petite Etoile*, ("Little Star") pre-war scheme, which embraced the main lines radiating some 20 miles from Brussels. Studies, however, made during the war years resulted in a new scheme, the "1,500-km. programme" in postwar years. Of that programme, the Brussels Midi-Charleroi line, and the separate freight line from Antwerp harbour to Linkebeek (by-passing the centre of Brussels) were

Two-car motor coach set of 1950 for Brussels-Charleroi services



Two-car high-speed set of 1951, *the prototype of* 38 *on order for fast main-line services, principally between Brussels and the coast*

electrified in 1949. The work now under way comprises: Brussels to Ostend, Blankenberghe and Knocke, scheduled for completion this year and of which the Brussels-Ostend section has been inaugurated; the Brussels-Liége line, with the junctions to other lines in the Liége area (1955); and the Brussels-Arlon-Athus line to the Luxembourg frontier (1956). When this work is finished 790 route-km. (490 route-miles) will have been converted to the 3,000-V. d.c. system, equivalent to about 16 per cent of the total S.N.C.F.B. route-mileage.

Stock for Post-War Services

Drawings for the future multiple-unit trains were prepared during the war, and a prototype was built in 1946. Because of the complication of flexible drive, and its comparatively high recurrent cost for inspection and general overhaul, and also because of improvements in bogie design, it was decided to use nose-suspended motors, even when a speed as high as 140 km.p.h. (87 m.p.h.) was contemplated. This high speed was chosen for the prototype deliberately to test nose-suspended motors on Pennsylvania-type compensated bogies with only one motor per bogie and a pivot offset from the centre of the wheelbase in order to equalise the axle loads. This twin-car set had an empty weight of 110 tons and an overall length of 145 ft.

New electrical equipment was tried. It was of the type already applied to the Paris-Le Mans motive power of the French National Railways, and on many trains of the Paris Metro, under the name of J.H., or Jeumont-Heidman. The h.t. contactors were cam-operated, with the camshaft driven by a l.t electric motor. Instead of 13 control notches in the earlier trains there were 22, and the transition from series to series-parallel was made by the bridge scheme, the final result being a much smoother acceleration. For the first time the main switchgear was not placed entirely below floor level, for a small h.t. compartment was provided in one of the cars.

Electrification Extended

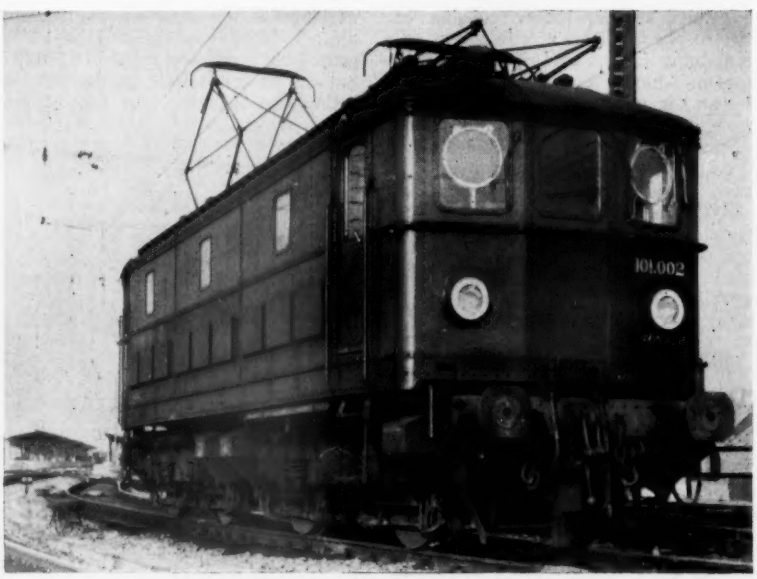
During 1949-50 electric traction was introduced on the Brussels-Charleroi route and on the Antwerp-Linkebeek freight line. For the former 25 twin-car trains were built. The prototype of 1946 served as the model, but as the Charleroi line does not require a high speed the maximum was fixed at 105 km.p.h. (65 m.p.h.). These sets are used indiscriminately for the fast trains over the 33-mile route and for those stopping at all stations. The relatively low top speed helps to give good acceleration and low energy consumption.

Though of all-steel body frame and panel construction, extensive use of light alloys has been made for the interior fittings. The normal automatic air brake of earlier trains was abandoned and replaced by a special direct-acting air brake. For the first time on the Belgian National Railways fluorescent lighting was used on a 72-V. d.c. circuit.

High-Speed Sets

After the introduction of the Charleroi stock and the proving of it in traffic, there remained only one problem concerned with multiple-unit trains in relation to the "1,500 km. programme." That was the design and construction of high-speed motor-coaches. During 1950 the S.N.C.B. built a prototype in its own shops, and this was put into traffic in February, 1951. The bogies were of the Pennsylvania type with one 265 h.p. nose-suspended motor in each, driving through single-reduction non-resilient gears. A modification from the true Pennsylvania bogie was made in that there are no axlebox guides, the roller-bearing axleboxes being held by small articulated links on the Alsthom system. Electrical equipment was of the J.H. type. This prototype train of 1950-51 was 150 ft. long and seated 161 passengers in one class on an empty weight of 76¼ tons. Top designed speed was 140 km.p.h. (87 m.p.h.).

With minor modifications this train was accepted as the design for the future express sets, and 38 trains of the same type have been ordered for delivery by the end of 1955. They are to be used principally for the fast services from Brussels to the coast. But



Series "101" *Bo-Bo locomotive*

as most of the internal passenger services on the "1,500 km. programme" lines can be operated with a rather lower top speed, 15 twin-car sets, each consisting of two motor coaches, were ordered for delivery in 1953-54, and 79 more for delivery in 1955. These are based on the Charleroi sets of 1950, but have a top speed of 120 km.p.h. (75 m.p.h.) in place of 105 km.p.h. (65 m.p.h.).

From Table I it will be seen that apart from the adoption of nose-suspended motors in place of springborne, the general tendencies of S.N.C.F.B. multiple-unit trains over 20 years have been reduced weight and, since 1950, a reduction in the proportion of standing to seated passengers.

Electric Locomotives

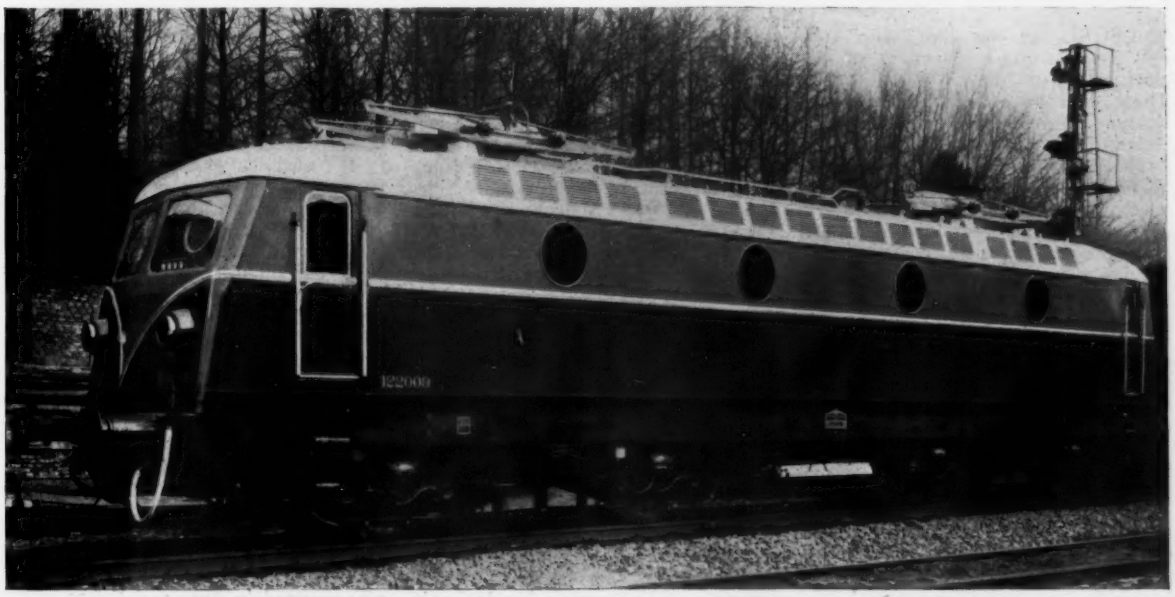
When the special freight lines from Antwerp to the Brussels-Charleroi line were electrified in 1949-50 the first electric locomotives of the S.N.C.F.B. were introduced. To allow of comparison for future designs they were of three types —series "101," "120," and "121." All are of Bo-Bo wheel arrangement and of approximately 80 tons weight, but series "121" have bogies of the type initiated by the Swiss Locomotive & Machine Works (S.L.M.) for the 4,000 h.p. Bo-Bo locomotives of the Berne-Lötschberg-Simplon and Swiss Federal Railways. Leading dimensions and characteristics of the three are given in Table 2 on the next page; all three classes are intended for heavy freight working up to 30-31 m.p.h., or fast freights up to 56 m.p.h.; or for passenger trains up to 62 or 78 m.p.h.

One of the three Bo-Bo locomotives of Series "120," a 2,700-h.p. design with axle-hung motors

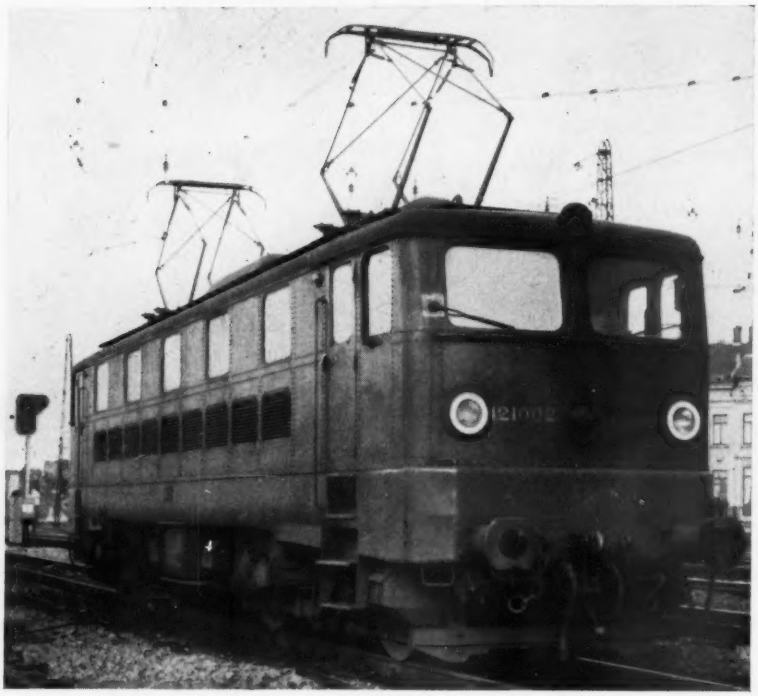
The electrical equipment of series "101" is of the conventional electro-pneumatic type with individual contactors and hand notching. Series "120" and "121" both have cam-operated contactors, and, like the motor-coaches, have automatic acceleration under the control of relays, the setting of which can be adjusted by the driver to a value

TABLE I—S.N.C.F.B. MULTIPLE-UNIT TRAINS.

Year of introduction	1935	1939	1946	1950	1951	1953	1954	1955
No. of train units	12	8	1	25	1	15	79	38
Maximum speed m.p.h.	75	75	87	65	87	75	75	87
Total length (ft.)	95	141	145	145	150	146	148	150
Seating capacity	358	145	164	170	161	170	188	173
Standing capacity	55	100	125	100	—	100	68	40
Total capacity	413	245	289	270	161	270	256	213
Percentage, 2nd class	33	18·5	8·3	19	26	19	12	25·5
Percentage, standing	13·5	41	43	43	—	43	26·5	19
Places per metre length	4·6	5·6	6·5	6·8	2·6	6·8	5·7	4·6
Total weight loaded, tons	270	126	134	115	90½	115	104	100
Adhesion weight loaded, tons	158	75	67	59	46	59	53	51
Axle load, tons	20	19	17	15	12	15	13·5	13
Total one-hour motor rating h.p.	2,120	1,060	1,060	1,060	1,060	1,060	1,060	1,060
H.p. per ton of loaded weight	7·85	8·43	7·9	9·2	11·7	9·2	10·2	10·6



Belgian National Railways Bo-Bo locomotive of Series "122" now in course of delivery



A Bo-Bo of Series "121," with automatic camshaft control as in the "120" class, but rated at 2,800 h.p. and having springborne motors with Brown-Boveri disc drive

appropriate to the adhesion conditions. On all locomotives the weight transfer effects of motor torque reaction and drawbar reaction can be compensated either electrically or by pneumatically-operated mechanical means.

Development of the "1,500 km. programme," particularly the Luxembourg line, required the provision of many more heavy locomotives. Therefore 50 locomotives of the Bo-Bo type, known as series "122" have been ordered for delivery during 1955, and the first has been completed recently. They have electrical equipment similar to that of series "120"; the bogies, however, are of the S.L.M. type similar to those of series "121" but with nose-suspended motors identical with those of series "120." Orders for another 83 locomotives have also been authorised, particularly for the heavy freight traffic over the steep grades, up to 1·6 per cent (1 in 62) of the Luxembourg line, and for these an axle load of 23 *tonnes* is being specified and regenerative braking is being incorporated.

TABLE 2—S.N.C.F.B. ELECTRIC LOCOMOTIVES

Series.	101	120	121
Year of introduction	1950	1950	1950
Available units ...	20	3	3
Max. speed, m.p.h.	62	77	81
Total length, ft. in ...	42-6	56-6	53-6
Pivot pitch, ft. in ...	19-7	30-7	26-3
Bogie wheelbase, ft. in.	9-8	11-6	11-10
One-hour rating of motors, h.p. ...	2,200	2,700	2,800
Continuous rating of motors, h.p. ...	1,800	2,200	2,340
Motor suspension and transmission	axle-hung; twin resilient gears	axle-hung; single solid gears	springborne; B.B.C. disc drive

Electrification Developments in Poland

New locomotives and multiple-unit trains on order for extended services

BEFORE the war the Polish Railways worked 104 miles of line electrically in the Warsaw district. These lines have been restored after wartime damage and extensions of electrification are being carried out.

The electrification of the line from Warsaw to Stalinogrod (formerly Katowice), forming part of the Polish Government's Six-Year Plan, is making rapid progress. It is expected that electrical working of passenger trains between Warsaw and Lodz will be begun this autumn and that goods trains will be electrically hauled between Warsaw and Piotrkow on the Katowice main line early in 1955. The whole line between Warsaw and Stalinogrod will be electrically operated from the end of 1955; express trains will cover the 318 km. in 3½ hours.

In the north of the country the existing electrification between Gdansk (Danzig) and Zoppot is being extended to Gdynia. All the lines referred to are using 3,000 V. d.c. The single-phase lines in Silesia have been dismantled.

The electric locomotives and rolling stock includes 10 BB locomotives, four of them shunters, and 76 three-coach sets. Eight new BB locomotives have been ordered in Sweden and 74 new multiple-unit sets are being delivered. Thirty of the sets have electric equipment supplied by the English Electric Co. Ltd. and Metropolitan-Vickers Electrical Co. Ltd.; their mechanical equipment is Polish. The remaining 44 have mechanical parts supplied by the Swedish builders A.S.J. and K.M.V. and their electrical equipment is by Asea. All the sets are similar in form and construction. The total weight unladen is 113 *tonnes* with the British and 116 *tonnes* with the Swedish stock.

Bogie Suspension

The bogies embody two-stage suspension with swing bolsters, the primary system consisting of laminated and coil springs acting in conjunction, and the secondary of laminated springs connected to the bogie frame by hangers. S.K.F. roller bearing axleboxes are fitted. The four four-pole traction motors operate at 1,500 V. and are self-ventilated. They are nose-suspended and drive through unilateral single-reduction gears with a ratio of 21/74 (wheel dia. 3 ft. 3 in.).

The electrical equipment is installed in the centre vehicle of the three-car set and consists of three assemblies, one of which (auxiliary machines) is mounted on the underframe, while the other two (main equipment frames) are located in two spacious compartments at the centre of the coach with a longitudinal corridor between them.

A camshaft with electric servo-motor drive operates the starting and field-shunting contactors. There are six series and seven series-parallel notches, with two weak-field steps (56 per cent and 44 per cent), in each grouping.

The length of the Polish-British-built sets is 60·2 m. and that of the Swedish-built stock 62·5 m. Each type has seats for 200 passengers and standing room for another 300. The sets are generally grouped in twos and threes.

RAILWAY NEWS SECTION

PERSONAL

Appointment of the Chairman and Members of the London Transport Executive has been continued for a further year from October 1 next. In announcing this, the Minister of Transport expressed his complete confidence in the Executive.

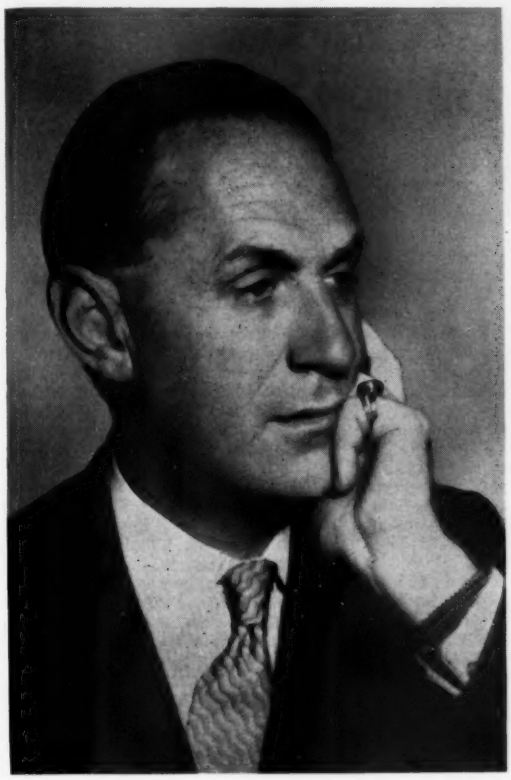
Mr. Alan Lennox-Boyd, P.C., Minister of Transport & Civil Aviation, who has been appointed Colonial Secretary, was, before his last appointment, Minister of State for Colonial Affairs. Mr. Lennox-Boyd was born in 1904, and educated at Sherborne and Christ Church, Oxford. He has been Conservative Member of Parliament for Mid-Bedfordshire since 1931, and was Parliamentary Secretary, Ministry of Labour, between 1938 and 1939; Parliamentary Secretary, Ministry of Home Security, 1939; Parliamentary Secretary, Ministry of Food, 1939-40, and Parliamentary Secretary, Ministry of Aircraft Production, 1943-45. He served as a Lieutenant in the R.N.V.R. from 1940 to 1943. In 1951 Mr. Lennox-Boyd became Minister of State for Colonial Affairs, and the following year Minister of Transport & Civil Aviation. He has been responsible for piloting through Parliament the 1953 Transport Act, which amended the Socialist measure of 1947, and also for the designing and introduction of last month's White Paper relating to the reorganisation of the railways.

Mr. John Boyd-Carpenter, who succeeds Mr. Alan Lennox-Boyd as Minister of Transport & Civil Aviation, was born in 1908 and educated at Stowe School and Balliol College, Oxford. While up at Oxford he was President of the Oxford University Conservative Association. He was also President of the Oxford Union, and toured the United States as a member of the Union Debating Team. He took a degree in history, and subsequently the Diploma in Economics. Mr. Boyd-Carpenter was a Harmsworth Law Scholar of the Middle Temple, and was called to the Bar by the Middle Temple in 1934. He practised as a barrister until 1939. He was awarded the Council of Legal Education's Prize for Constitutional Law in 1933. On the outbreak of the 1939-45 war he joined the army and was later commissioned into the Scots Guards. He served with the Allied Military Government in Italy, attaining the rank of Major in 1943. In the General Election of 1945 he was elected Member of Parliament for Kingston-on-Thames, and he retained this seat in the 1950 and 1951 General Elections. He was appointed Financial Secretary to the Treasury in the 1951 Elections.

Commander R. Scott-Miller, V.R.D., M.P., has been appointed to be Parliamentary Private Secretary to Mr. John Boyd-Carpenter, the new Minister of Transport & Civil Aviation.

Major Montague Jayewickreme has been appointed Minister of Transport, Ceylon, in succession to the Rt. Hon. Sir John Kotelawala.

Mr. J. M. Dharmaratne, B.Sc. (Hons.) (Lond.), A.M.I.Mech.E., Assistant Divisional Transportation Superintendent, Ceylon Government Railways, has been appointed Divisional Transportation Superintendent.



Mr. Alan Lennox-Boyd
Minister of Transport & Civil Aviation, 1952-54

Mr. John Boyd-Carpenter
Appointed Minister of Transport & Civil Aviation

We regret to record the death on July 24, at the age of 81, of Mr. Arthur Henry Johnstone, formerly Chief Engineer of the East Indian Railway.

Mr. R. J. Fitch, formerly Chief Civil Engineer of the Commonwealth Railways at Port Augusta, has been appointed Assistant to the Railways Commissioner, South Australia.

We regret to record the death on July 30, at the age of 77, of Mr. John Reginald Hare Duke, O.B.E., formerly Deputy Engineer-in-Chief, Egyptian State Railways.

Mr. G. Mackenzie Junner has been re-elected President of the Institute of Road Transport Engineers for 1954-55.

Mr. David Hill, who has been Acting District Passenger Superintendent, Leeds, North Eastern Region, British Railways, has been confirmed in that position.

Mr. W. E. Blakey

Assistant Commercial Superintendent, Eastern Region, 1948-54

Mr. B. X. Jessop

Appointed Assistant Commercial Superintendent, Liverpool Street, Eastern Region

Mr. A. R. Dunbar

Appointed Assistant Chief Regional Manager, N.E. Region

Mr. W. E. Blakey, M.B.E., M.M., Assistant Commercial Superintendent, Eastern Region, who as recorded in our July 16 issue, retired on July 30, has completed nearly fifty years of service. Mr. Blakey began his career on the North Eastern Railway as a junior clerk in 1904. He was selected as a Traffic Apprentice in July, 1914, and, after a period of active service during the war, returned to the railway at Newcastle Forth Goods Station in 1919. The next year saw him as Head of the Staff Department in the General Superintendent's Office, York, from which he was in 1923 appointed Assistant District Superintendent, L.N.E.R., Newcastle. He became Assistant to the Superintendent, York, in 1927, and District Superintendent, Darlington, in 1929, being appointed to the position of District Goods Manager, Middlesbrough, in 1932. He was promoted to be Assistant Goods Manager, North Eastern Area, in 1936. Mr. Blakey was appointed District Goods Manager, Leeds, in the next year, from the duties of which position he was released at the outbreak of the last war to take up military duties. On demobilisation from the post of Director of Transportation, S.H.A.E.F., with the rank of Brigadier, he was appointed London City Manager. In March, 1948, Mr. Blakey was appointed Assistant Commercial Superintendent, Eastern Region, Liverpool Street.

Mr. Bernard Xavier Jessop, E.R.D., M.A., M.Inst.T., Assistant Chief Regional Officer, North Eastern Region, British Railways, who, as recorded in our July 16 issue, succeeds Mr. Blakey as Assistant Commercial Superintendent, Eastern Region, Liverpool Street, was born at Corbridge-on-Tyne, Northumberland, and educated at St. Bees and at Clare College, Cambridge. He joined the London & North Eastern Railway in 1927. After serving in the Traffic and Goods Departments, he was appointed in 1933 Assistant to the District Goods Manager, Leeds, with special responsibility for cartage. In 1935 he became Chief Clerk, and later Assistant, to the District Passenger Manager, Newcastle. In 1937 he was appointed Assistant District Goods Manager, and, in 1939, District Passenger Manager at Leeds. As a member of the Supplementary Reserve he was called up at the outbreak of war, and he held appointments in the Movements Directorate in France, England, Northern Ireland, and India. During his absence with the Forces he was appointed District Superintendent, Sunderland, but, on demobilisation, took up the position of Assistant Passenger Manager, North Eastern Area, L.N.E.R., in October, 1943, and, a year later, that of Assistant Goods

Mr. G. H. Eimer

Appointed Assistant Chief Engineer South Australian Railways

Mr. L. H. A. McLean

Appointed Designing Engineer, South Australian Railways

Lt.-Colonel R. H. Edwards

Appointed Civil Engineer, South Wales Docks, British Transport Commission

Manager, North Eastern Area. In December, 1948, he was appointed Assistant Chief Regional Officer, North Eastern Region, the position he now vacates.

Mr. Alexander Robert Dunbar, M.B.E., who, as recorded in our July 16 issue, has been appointed Assistant Chief Regional Manager, York, entered the service of the North British Railway at Stobcross in 1920 as a junior clerk. In 1924 he qualified by competitive examination for appointment as a Traffic Apprentice on the L.N.E.R., and, after completing a three years' training period, became Assistant Yardmaster, Cadder (Lanarkshire). He then moved to the Manchester area to take up the post of Assistant Yardmaster, Guide Bridge, in 1931 being appointed Deputy Chief Controller, District Control Office, Manchester. After a period in the Central Control Office at Liverpool Street, London, Mr. Dunbar was, in 1935, appointed Yardmaster, Sheffield, and a year later returned to Manchester as Assistant District Superintendent. In 1940 he was appointed District Superintendent, Leeds, and, in 1942, District Superintendent, Manchester. He became Acting Assistant Superintendent (Eastern Section), Southern Area, L.N.E.R., in 1943. At the end of the war he was awarded the M.B.E. for services in connection with military and air force traffic in East Anglia. In 1946 he became Senior Assistant Superintendent, Southern Area, L.N.E.R., and, in January, 1948, was appointed Operating Superintendent (Eastern Section), Eastern Region, British Railways. Mr. Dunbar's appointment to the position of Divisional Operating Superintendent (Eastern), Liverpool Street, London, followed in February, 1949.

Mr. G. H. Eimer, Designing Engineer, South Australian Government Railways, who, as recorded in our July 16 issue, has been appointed Assistant Chief Engineer of the system, first entered railway service in May, 1926. Since then he has been closely connected with all major works in the Engineering Branch, and in more recent years has been the authority on all matters relating to engineering plant. He has followed closely in the wake of his predecessor, having occupied the position of Designing Engineer before taking up his present position.

Mr. L. H. A. McLean, who has been appointed Designing Engineer in the Engineering Branch of the South Australian Government Railways, entered the service on March 24, 1941, as a junior on the professional staff. Having been refused leave from the railways to serve in the defence forces, at the early age of 24 he received appointment to the position of Assistant Superintendent at Murray Bridge in 1949. In 1951 he took over as the Engineer-in-Charge of Gauge Widening operations of the South-East Narrow Gauge lines, and managed these responsible duties through the next two and a half difficult years, returning to Head Office in 1953. It was only a matter of seven months before he received appointment to his present position of Designing Engineer.

Lt.-Colonel R. H. Edwards, E.R.D., M.I.C.E., A.M.Inst.T., Civil Engineer, South Wales Docks (East), British Transport Commission, who, as recorded in our July 16 issue, has been appointed Civil Engineer, South Wales Docks, with effect from August 1, 1954, will be the civil engineer responsible for all the docks of the Commission in South Wales and Monmouthshire together with the inland waterways in the area. He was a pupil of the Chief Engineer of the Taff Vale Railway and, after the amalgamations in 1922, served under the Great Western Railway successively at Penarth Dock, Barry Docks, Bristol, Newport, Swansea Docks, Paddington, Newport Docks, and Cardiff Docks. In 1937 he was appointed Assistant Divisional Docks Engineer at Barry and, in 1946, Divisional Docks Engineer, assuming, after nationalisation, the appointment of Civil Engineer, South Wales Docks (East), the position he now vacates. Colonel Edwards has served on the Council of the Institution of Civil Engineers since 1949. He was Chairman of the Maritime & Waterways Division for the last three sessions. A Fellow of the Permanent Way Institution, he was Chairman of the South Wales Section in 1938, Vice-President for Wales in 1951, and has served on the Council for over twenty years. He is also a Member of the Société des Ingénieurs Civils de France. Commissioned in the Royal Engineers (Supplementary Reserve) in 1925, he commanded the 151 (G.W.) Railway Construction Company in 1936, and was on active service throughout the 1939-45 war, being promoted Lieutenant-Colonel in 1940. He retired from the Corps in 1949 and last year was awarded the Army Emergency Reserve Officers Decoration by H.M. the Queen.

We regret to record the death, at the age of 96, of Captain F. M. Barwick, O.B.E., who, for many years and until the grouping of the railways in 1923, held the dual position of Portmaster & Marine Superintendent of the former Great Central Railway at Grimsby and Immingham.

The Supplement dated June 4, 1954, to *The London Gazette* of June 1, 1954, records that Major (Honorary Colonel) A. C. J. Payne, O.B.E., M.M. (42452), has been awarded the Army Emergency Reserve Decoration with two Clasps.

Dr. Ing. F. C. Hardt, whose death was briefly announced in our July 16 issue, was well known to many on British Railways, for he had spent a period of nearly two years with the G.W.R. in 1928-1929. On the initiative of Sir Felix J. C. Pole, then General Manager, an exchange of those expected later to rise to officer rank was arranged with Dr. Dörpmuller, General Manager of the German Railway. Dr. Hardt, who had attained the rank of Reichsbahnrat in 1924, proved an admirable choice as he had spent some time at Oxford in 1913 and possessed fluent English. Born in 1892 he had joined the German Railway in June, 1919 and served for some years in the Berlin headquarters, gaining knowledge of the different departments, more particularly public relations and the press section. He was responsible for the conspicuous success of the visit of the Railway Students Association (L.S.E.) to the German Railway in 1926 and was the German liaison for the reciprocal visit to this country in 1927. On his return to Germany in 1929 he served at Wetzlar and Detmold before rejoining the head office in Berlin, where he filled a succession of high appointments, covering costing, passenger traffic, and statistics. When Dr. Dörpmuller also became Minister of Transport, Dr. Hardt became attached to him at the Ministry, and, with him, visited Britain and the United States, returning to Germany from the latter by airship—an unusual experience for a railway officer. In 1945 he became President of the Cologne Division where he was destined to do much to further Anglo-German traffic and to welcome many visiting British railwaymen. He was a member of the British Institue of Transport.

Mr. L. C. Southcott, Special Director and the Chief Engineer of the Superheater Co. Ltd., has been appointed a Director of the company.

Mr. C. P. Storr, M.I.Mech.E., M.I.E.E., has been appointed Manager of the Dominions Division of the Metropolitan-Vickers Electrical Export Co. Ltd.

Mr. J. W. Siberg, Joint Managing Director, Skefko Ball Bearing Co. Ltd., is retiring, but remains a member of the board. Mr. G. A. R. Mead continues in the capacity of Joint Managing Director, and is joined by Mr. C. U. Magnusson.

Mr. L. C. W. Turner has been appointed Sales Director of the Brush Electrical Engineering Co. Ltd. Mr. Turner has been with Crompton Parkinson Limited for the past 22 years. He has been Manager of that company's Belfast office, and later took charge of the north-west area. Mr. Turner will take up his duties in Loughborough on September 1.

We regret to record the death on July 25 of Mr. Percy Hutchinson Wilson, O.B.E., M.I.Mech.E., Deputy Managing Director of the Stanton Ironworks Co. Ltd. Mr. Wilson, who was a Past-president of the Institute of British Foundrymen, had taken a prominent part in the foundry industry in this country for forty years. He designed and introduced the flexible pipe joint which bears his name.

Mr. Stanley Parkes has been appointed Chairman of Associated Automatic Machine Corporation and its subsidiary, the British Automatic Co. Ltd. He succeeds Mr. Thomas Marson Till, who has retired as Chairman of both companies, and as Managing Director of the British Automatic Co. Ltd. Mr. Till has also resigned from both boards.

Mr. Frank L. Timmins has been appointed Managing Director of the British Automatic Co. Ltd., and Mr. William T. James, Deputy Chairman. Mr. Brian M. Till has been elected a Director of the company.

Railway Clearing House

Following the Order made by the Minister of Transport & Civil Aviation whereby the property, rights, powers, and liabilities of the Railway Clearing House have been transferred to the British Transport Commission, the Commission has appointed the following Committee to govern the Clearing House on its behalf:—

Sir Reginald Wilson, Member of the British Transport Commission (Chairman);

Mr. J. W. Watkins, Chief Regional Manager, London Midland Region, British Railways;

Mr. K. W. C. Grand, Chief Regional Manager, Western Region, British Railways;

Mr. David Blee, Chief of Commercial Services, British Transport Commission;

Mr. S. B. Taylor, Chief Secretary, British Transport Commission.

The Railway Clearing House will continue to function under the old title, and under the immediate administrative direction of Mr. T. J. Lynch, Secretary.

XUM

Further U.S.A. Train Accelerations

Timings cut over competing routes

The substantial acceleration of certain long-distance trains between Chicago and Los Angeles from January 10 last, which increased the number of streamlined 39½ hr. services by the Santa Fe and joint Chicago & North Western-Union Pacific routes to a total of five in each direction daily, has been followed by a substantial speed-up of certain of the best-known Chicago-New York expresses of the New York Central and Pennsylvania Railroads were much accelerated from the introduction of Summer Time on April 25. They are the "Twentieth Century Limited" and "Commodore Vanderbilt" of the New York Central, and the "Broadway Limited" of the Pennsylvania.

The "Twentieth Century" all-room sleeping-car train, which conveys only through passengers between New York and Chicago, has been accelerated from 16 hr. in each direction to 15¾ hr. westbound and 15½ hr. eastbound; the latter of which calls for an average speed of 61·8 m.p.h. throughout including all intermediate stops. The 15¾ hr. westbound is the fastest time that has ever operated in this direction; eastbound, a time of 15½ hr. was in force from April, 1947, to September, 1950, and again from April to June, 1951, but between these periods the time was eased to 15¾ hr., and from June 17, 1951, it reverted to 16 hr. The westbound train now leaves New York at 6 p.m., and reaches Chicago at 8.45 a.m.; the eastbound leaves Chicago at 5 p.m., and is into New York at 9.30 a.m. Chicago (Central) time is 1 hr. later than New York (Eastern) time.

The "Commodore Vanderbilt," also an all-room sleeping car train, but without the supplementary special service charge that is levied on the "Twentieth Century," while continuing to take 16 hr. westbound, has been accelerated to the same 15½ hr. eastbound time as the "Century." It now leaves New York at 5.30 p.m., and reaches Chicago at 8.30 a.m.; returning at 4.30 p.m., it is into New York at 9 a.m. Both these expresses are heavy 15-car to 17-car formations of sleeping, restaurant, lounge, and observation car stock. The New York Central announces that in the autumn the "Twentieth Century" will be accelerated to a 15-hr. run, which will entail an overall speed of 63·9 m.p.h.

Competitive Accelerations

The Pennsylvania Railroad abolished the special service charge on its competing "Broadway Limited" some years ago, and hitherto has made no reply when the New York Central cut its "Twentieth Century" times below the 16 hr.; but the acceleration of the latter's non-extra-fare "Commodore Vanderbilt" has forced the Pennsylvania to take action. From April 25, therefore, the "Broadway" has been accelerated to 15¾ hr. westbound and 15½ hr. eastbound. The Pennsylvania has the shorter route, 902·6 miles, but very much harder from the gradient point of view, as the main line passes over a summit level of 2,194 ft. at Gallitzin, in the Allegheny Mountains west of Altoona, approached by gradients as steep as 1 in 40. The "Broadway" time includes nine intermediate stops, all for passenger purposes. The westbound train leaves New York at 5 p.m., and reaches Chicago at 7.45 a.m.; return is at 4 p.m. from Chicago, and New York is reached at 8.25 a.m.

Besides the foregoing, the joint Rock Island-Union Pacific "Golden State" streamline train between Chicago and Los Angeles via Kansas City and El Paso has been accelerated 1 hr. 50 min. westbound and 1 hr. eastbound, bringing the overall times down to 42½ hr. and 43¼ hr. respectively. This is to offer better competition with the three recently accelerated Santa Fe 39½-hr. trains. The westbound "Imperial" over the Rock Island route has been cut by 45 min. A beginning with acceleration on the North Western-Union Pacific-Southern Pacific Chicago-San Francisco service has been made by speeding up the "Overland" one hour each way, though this is not so fast a service as the extra-fare "City of San Francisco" (40¼ hr. westbound and 40 hr. eastbound). On the Western Pacific section of its run, the Burlington-Rio Grande-Western Pacific streamliner "California Zephyr" has been accelerated 30 min. each way.

The Chesapeake & Ohio "Sportsman" and "George Washington" services have both been accelerated, the latter by 36 min. from Washington to Louisville, westbound, and the former, eastbound, by 45 min. from Cincinnati to Washington. The Wabash has cut the schedule of its St. Louis-Detroit "Cannonball" by 55 min. westbound and 20 min. eastbound. The widespread acceleration now taking place on American railways is the result both of the continued introduction of diesel-electric power, and, on lines which already were extensive diesel users, of the introduction of more powerful haulage units.

First Main-Line Electrification in Australia

Inauguration of stage one of Gippsland Line project of Victorian Railways

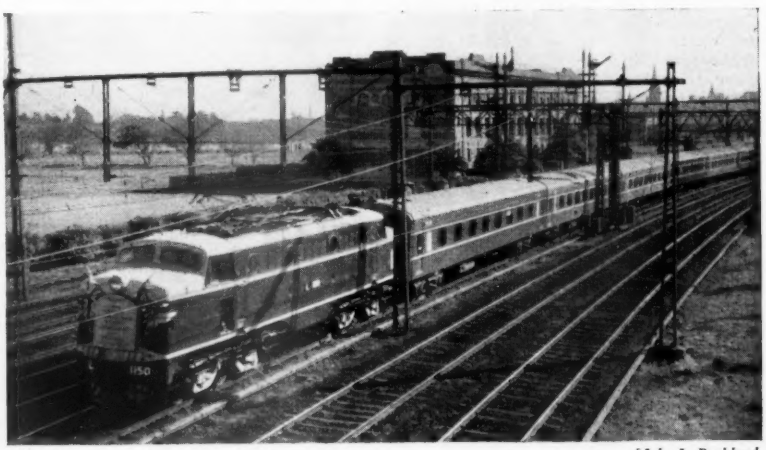
The first stage of the Gippsland line electrification of the Victorian Railways and the first main-line electrification in Australia was inaugurated on July 21 when a special electric train ran from Melbourne to Warragul, 61 miles, hauled by No. 1150, the first of the 25 "L" class 2,400 h.p. Co-Co main-line locomotives built by the English Electric Co. Ltd. The front of the locomotive was decorated with national flags and bore a plaque inscribed "First Electric Passenger Train Between Melbourne and Warragul." The train conveyed the Premier, Minister for Transport, other State Ministers and Members of Parliament, the Railways Commissioners and heads of Departmental branches and about 240 guests of the Commissioners.

Electrification and Regional Development

The Premier, speaking at Warragul, emphasised that the electrification of the Gippsland main line was an integral part of the great Latrobe Valley development scheme, which in the near future would result in a population of at least 50,000 in the area. Electricity, solid fuel and gas would come from the brown coal deposits in the valley, making the State independent of outside fuel resources. Mr. R. G. Wishart, Chairman of the Railways Commissioners, said that on the electrification of the line and completion of doubling works now in progress, the capacity of the line would be substantially increased from the present service of 40 trains a day, of which ten are passenger trains, with substantial accelerations.

The special train of eight coaches, weighing about 400 tons, was made up of seven S-type air-conditioned steel coaches cars (6 AS first class and 1 BS second class) and the Commissioner's inspection car *Norman*. The inspection car, built in 1890 as a sleeping car, has been reconstructed and provided with a new underframe (from No. 1 State Car) and strengthened six-wheel welded bogies.

Electric locomotives hauled some eastbound trains on July 21 so that they could be ready at Warragul for scheduled operations beginning the next day. Although the official train was not the first electric train to reach Warragul, as many test trips by coupled pairs of locomotives, sometimes with trains, had been worked elec-



Photo] *[John L. Buckland*

The inaugural train hauled by English Electric 2,400-h.p. Co-Co locomotive

trically for a month previously, it marked the inauguration of electric traction on the first section of a main line to be electrified in Australia.

New Timetable

On July 22, a temporarily recast timetable of the Gippsland line and branch connections came into operation for both passenger and goods trains. All traffic between Melbourne and Warragul (61 miles) is now electrically hauled by single "L" class locomotives. Maximum loads in the eastbound direction have been set at up to 400 tons for passenger and 650 tons for freight trains. For westbound traffic the loads are 400 tons and 1,100 tons. Sectional freight loadings up to as much as 1,800 tons have been sceheduled for a single locomotive.

The 8.35 a.m. eastbound and 2.25 p.m. westbound "Bairnsdale Express" are now worked between Warragul and Sale by an "R" class 4-6-4 steam locomotive and between Sale and Bairnsdale by a "J" class 2-8-0 steam locomotive in place of the "B" class Co-Co diesel electric previously used throughout. Since July 22 all diesel-electric operations have been suspended on the Gippsland line; pending completion of electrification to Moe and Yallourn in 1955. Electrification should be completed to Traralgon (97 miles) in 1956.

Victoria-Minas Railway, Brazil

The 1953 results of the Victoria-Minas Railway show that revenue increased last year by 10·1 per cent, to the equivalent of £3,987,337, and expenditure rose 6·3 per cent, to £3,733,524.

Companhia Vale do Rio Doce, which administers the line, was formed with mixed state and private capital in 1942 to take over the concessional rights of the British Iron Ore Company, including the mines and the Victoria-Minas Railway. The line, now 569 km. long, runs from the port of Victoria, in Espirito Santo, to Itabira, Minas Geraes, with a branch to Desembargador Drumond, which links it to Belo Horizonte. Construction was started in 1903, the original intention being to connect Victoria to Peçanha, but in 1916 Itabira was made the terminus to facilitate exploitation of rich hematite deposits. In 1940 control passed to the mining company and, two years later, mines and railway were transferred to Brazil as a wartime measure, so as to guarantee supplies of iron ore to the Allies.

The company's original capital of 200,000,000 cruzeiros has been gradually increased to 650,000,000, almost all by Treasury subscriptions, and four successive loans by the Export-Import Bank have helped to raise the total investment at December 31, 1953, to 1,757,168,963 cruzeiros (£25,143,179).

The Victoria-Minas Railway was of primitive construction and required extensive reform to adapt it as an ore carrier on a large scale. Entire sections had to be rebuilt, with bridges and tunnels to cut out sharp curves and steep gradients, and the permanent way required strengthening throughout. The mines were re-equipped, crushing plants and automatic conveyor belts installed, with a modern mineral quay at Victoria.

In 1953 the railway carried 2,051,554 tons of freight and 1,151,151 passengers, compared with 276,751 and 376,879, respectively, in 1942. Last year it acquired 16 steel passenger coaches and 28 ore wagons, built in Brazil by Companhia Santa Matilda, and 91 diesel-electric locomotives of 125 h.p., supplied by General Motors. By substituting diesel traction for steam it is hoped to raise annual carrying capacity to 3,900,000 tons.

A new direct line, 127 km. in length, is to be built from Itabira to Belo Horizonte, to connect the Victoria-Minas with the Central and Rêde Mineira de Viaçao railways. The existing line from Desembargador Drumond to Belo Horizonte is uneconomical, with sharp curves and gradients of 2·5 per cent.

Royal Highland and Agricultural Show, Dumfries

Extensive use of containers for exhibits

Interior of British Railways stand featuring (right) railway facilities for farmers

The annual show of the Royal Highland & Agricultural Society was held at Dumfries this year, from June 22 to 25, and despite unfavourable weather attendance amounted to 113,000. On June 24 the show was visited by Queen Elizabeth, the Queen Mother, who had travelled from Dundee by special train.

British Railways, Scottish Region, provided comprehensive facilities for both passenger and freight traffic. The showground was about 1½ miles from St. Mary's Goods Station, where the exhibits, and so on, arriving by rail were unloaded.

For the construction of roads within the showground during the preparation stage, British Railways provided 13,276 railway sleepers; these arrived at Dumfries at intervals during the period April 20 to June 4.

Container Traffic

Deliveries of exhibits began on May 29, and by the opening date 398 wagonloads of show traffic had been received at Dumfries. Included in this total were 166 railway containers, which were motored to the showground for unloading at the site. To facilitate storage of these containers until required for the return journey, ground at Heathhall Airfield on the outskirts of Dumfries was lent by the Air Ministry, and 103 of the containers were accommodated there.

For the handling of containers and other heavy articles six mobile cranes of four, five, and six ton capacities were specially provided, three at St. Mary's, two at the showground, and one at Heathhall.

Cartage arrangements required much detailed planning, and the local fleet was augmented by six motors and 100 trailers to move traffic before the show. The peak demand on the cartage facilities arose immediately after the show, however, and from the Friday afternoon (June 25) until Sunday afternoon 16 additional motors were lent from other stations. Heavy rainfalls made working difficult for motors at the showground.

A special train from Exeter brought exhibits from the Bath & West Show, and one from Gloucester exhibits from the Gloucester & Three Counties Show. Six specials left Dumfries during the weekend after the end of the show, carrying 173 wagonloads of exhibits to the Royal Show at Windsor. The total number of wagons forwarded after the show was 418.

Cheap excursion tickets were issued from all parts of Scotland. Six special trains included one from Keith and Aberdeen and a National Farmers' Union excursion from Morpeth. Information and advice as to railway and bus facilities was available at the joint British Railways and Scottish Bus Group pavilion.

ARSON IN CARRIAGE SHED.—A youth was charged recently with having caused two fires at the railway carriage sheds at Allerton, Liverpool. It was stated that on June 11 and 18 two serious fires occurred at the railway carriage sheds. In the first a coach was found to be on fire, and before it could be extinguished extensive damage was done to a number of coaches and a large area of the shed roof was destroyed. Damage was estimated at £20,000. In the second fire one coach was completely destroyed and others were damaged. The estimated damage was some £10,000. The youth, who was charged with other offences, was remanded in custody.

Parliamentary Notes

Royal Assent

Among the 44 Acts which received the Royal Assent in the House of Lords on July 30 were the Post Office (Site & Railway) Act, the British Transport Commission Order Confirmation Act, and the British Transport Commission Act.

Questions in Parliament

British Transport Commission Report

Mr. Ernest Davies (Enfield East—Lab.), asked on July 29 when the annual report and accounts for 1953 of the B.T.C. would be available.

Mr. Alan Lennox-Boyd (Minister of Transport & Civil Aviation) in a written reply stated: I understand that the Commission is about to consider the final draft of its report. It hopes it will be ready in September.

Railway Superannuitants

Lt.-Colonel W. H. Bromley-Davenport (Knutsford—C.) on July 28 wanted to know the result of the inquiries by the Minister of Transport & Civil Aviation into the position of many railway superannuitants who did not benefit under the recent increases announced by the B.T.C.

Mr. Alan Lennox-Boyd wrote in reply: As the Joint Parliamentary Secretary informed the House during the Debate on the Adjournment on June 2, the Commission has recently considered this matter afresh and has told me that, taking all the factors into account, it does not feel justified in improving the scheme of pension supplements it introduced in March 1953. I feel bound to accept its judgment.

Transport in the Highlands

Mr. Alan Lennox-Boyd (Minister of Transport & Civil Aviation) in a written answer to questions by Lord Malcolm Douglas-Hamilton (Inverness—C.), Sir David Robertson (Caithness and Sutherland—C.) and Mr. John MacLeod (Ross and Cromarty—Nat. Lib. C.) on July 15 stated that the Government were well aware of transport difficulties in the Highlands and were doing all they could to alleviate them. The Chairman of the B.T.C. had given an assurance that Scottish interests would be fully consulted on the new railway Merchandise Charges Scheme and the Commission would give the Highlands a fair deal.

Siam-Burma Railway

Mr. James Johnson (Rugby—Lab.) on July 30 asked the Minister of Pensions & National Insurance whether he would make a statement about the distribution of the £170,000 received from Siam for the Siam-Burma railway built by prisoners of war, and the money available from Japanese assets in Britain.

Mr. Osbert Peake, in a written reply, stated that the Government of Siam paid £1,250,000 for the part of the railway in its territory and all but £355,000 was divided between the Governments of Malaya, Burma, and the Netherlands East Indies in compensation for materials taken from them by the Japanese to equip the Burma-Siam Railway. The £355,000 remaining has been apportioned between Allied Governments whose servicemen were forcibly employed on the railway and the United Kingdom share is about £170,000. It has been decided to distribute this money along with that available under Article 14 among all service personnel who were prisoners of war of the Japanese or, where they have died, their widows, orphans, or parents. As far as can be judged at present the sum available for distribution under Article 14 will provide for a further payment of about £20 a head, in addition to the £15 already paid.

London Transport Executive Members

Captain R. E. D. Ryder (Merton & Morden—C.) on July 27, asked whether the Minister of Transport & Civil Aviation would make a statement about the re-appointment of the members of the London Transport Executive when their present terms of office expired in September next.

Mr. Alan Lennox-Boyd, in a written reply, stated: I have appointed the Chairman and Members of the London Transport Executive on each of the last two occasions for a term of one year only, for the reason that the changes contemplated in the structure and organisation of the B.T.C. made it advisable. I greatly regretted having to limit the period of their appointments as they have my complete confidence, and I still more regret, as does Sir Brian Robertson, who shares my confidence, that, until the major changes in the structure and organisation of the Commission have been put into effect, I am still unable to make these appointments for a longer term. In these circumstances the Chairman and Members of the L.T.E. have agreed to accept office for a further term of one year from October 1 next.

Disposal of Road Haulage Assets

Mr. James Callaghan (South East Cardiff —Lab.) on July 21 asked if the Minister of Transport & Civil Aviation, in view of Section 3 (6) of the Transport Act, 1953, would take steps to find out to what extent the practice was, of widespread transferring vehicles from the original purchaser to other owners within, say, three months of their original sale.

Mr. Alan Lennox-Boyd replied: I am informed that the general effect of the limited number of such transfers which have been made has been to put the vehicles into a greater rather than a small number of hands.

Mr. Callaghan said that a number of people were buying those vehicles, not for the purpose of going into transport, but in order immediately to re-sell them at a profit.

Mr. Lennox-Boyd said that was quite untrue. A large proportion of those assignments were pure formalities. He was prepared constantly to watch the development of this Act.

Road Haulage Compensation Payments

Mr. Joseph Grimond (Orkney and Shetland—Lib.) asked in the House of Commons on July 14 why £2,000,000 was still owing to road hauliers as compensation for nationalisation, and when it would be paid.

Mr. Hugh Molson (Joint Parliamentary Secretary to the Ministry of Transport & Civil Aviation) replied:—The amounts payable have yet to be agreed between the B.T.C. and the transferors, or to be determined or confirmed by the Transport Arbitration Tribunal, as required by the Transport Act, 1947. I cannot say when the last payment will be made, but it will be as soon as the requirements of the Act have been fulfilled.

Mr. Grimond asked whether some way of allowing these hauliers credit could be devised with which they might be able to buy back the lorries which were originally theirs.

Mr. Molson said there was no power under present legislation which would enable the Minister to do that.

Level Crossings in Lincoln

Mr. Geoffrey de Freitas (Lincoln—Lab.) on July 27 wanted to know what applications had been made to the Minister of Transport & Civil Aviation within the last 2½ years by the City of Lincoln, British Railways or any other body in connection with reducing the inconvenience caused by the level crossings in Lincoln.

Mr. Hugh Molson (Joint Parliamentary Secretary to the Ministry of Transport & Civil Aviation) wrote in reply:—

The City of Lincoln applied for a grant towards the cost of erecting traffic control signals at the northern level crossing in High Street. This was issued in December, 1953. They have also sought approval, which has now been given, to the appointment of consulting engineers and architect for the design of a bridge to eliminate the level crossing in Pelham Street.

Night Shift Workers

Mr. William Wells (Walsall—Lab.) on July 26 asked whether the Minister of Pensions & National Insurance would make arrangements with the B.T.C. to ensure that his department's selection of the excluded day for purposes of National Insurance benefit should coincide with the B.T.C. calculation of the first day on which the employee was absent from work.

Mr. Osbert Peake said he assumed that Mr. Wells had night shift workers in mind. He was satisfied that the present regulations governing the payment of national insurance benefits to such workers were fair and reasonable. It would not be practicable to make different arrangements for different industries.

Staggered Working Hours

Mr. Ernest Davies (Enfield East—Lab.) on July 14 asked the Minister of Transport & Civil Aviation what steps he had taken to encourage the staggering of working hours in London to relieve increasing congestion during peak travel periods.

Mr. Hugh Molson (Joint Parliamentary Secretary) replied: We have already had discussions with the B.T.C. on this matter. We intend to follow these up by talks with other interested parties, including the Central Transport Consultative Committee.

Mr. Davies asked if the problem could not be referred to the London & Home Counties Advisory Committee.

Mr. Molson said he was not sure that that would be the best step to take at present.

Abnormally Bulky Loads

Mr. Ronald Russell (South Wembley—C.) on July 21 wanted to know if the Minister of Transport & Civil Aviation was aware of the increasing number of abnormally bulky and slow-moving loads such as ships propellers, railway carriages, and industrial plants which were transported by road, causing congestion and delay to other road users; and if he would consult with industry with a view to discouraging this traffic until the road system could be made adequate to carry it.

Mr. Alan Lennox-Boyd replied: The number of abnormal indivisible loads has increased since the war. Such traffic is usually of high national importance. The whole procedure for carrying heavy loads by road is now under review.

Contracts & Tenders

The New South Wales Government Railways have placed orders for 1,600 h.p. Co-Co diesel electric locomotives with the Clyde Engineering Co. (Pty.) Ltd., and the Australian General Electric Pty. Ltd. (six units each).

The Commonwealth Engineering Company has received orders from the New South Wales Government Railways for 80 all-steel suburban electric coaches (ten trains) and 80 stainless-steel Budd-type interurban electric coaches for the Sydney-Lithgow service.

The Commissioner for the Gold Coast in London announces that the Government of the Gold Coast has awarded the contract for the construction of a harbour at Tema, 17 miles east of Accra, jointly to John Howard & Co. Ltd. and Sir Lindsay Parkinson & Co. Ltd. The contract is stated to be worth £7,521,804 and work is expected to start towards the end of the year and to be completed in about four years.

The work is associated with the new railway line from Achimota to Tema and the extension from Tema running inland to the Shai Hills. These lines were described in our issue of July 16. Railway marshalling yards and a station are included in the contract, which also involves the building of two breakwaters, one of one mile in length and one of one-and-a-half miles. Other features include a quay with four deep-water berths, warehouses, and a fishing harbour.

A/S Fricks, of Aarhus, Denmark, has received an order from the Danish State Railways for two 1,760 b.h.p. diesel-electric main line locomotives with two-stroke engines, and suited to a top track speed of 75 m.p.h.

The Director General of Supplies & Disposals, New Delhi, invites tenders for:

(*a*) 300 axleboxes (10 in. by 5½ in.)

(*b*) 202 headstock striking steel casting (two lots)

(*c*) 1044 axleboxes (cast steel) (three lots)

Tenders, quoting references (a) SRI/16063-E/1; (b) SRI/16585-E/1; (c) SRI/16169-E/1(a), will be received up to 10 a.m. on (a) August 18; (b) August 20; (c) August 27.

Forms of tender are only available for purchase in India from the Deputy Director General (Supplies), Directorate General of Supplies & Disposals, New Delhi; Director of Supplies & Disposals, Bombay or Calcutta; Deputy Director of Supplies & Disposals, Madras.

If the date for the receipt of tenders does not allow sufficient time for tenderers to obtain forms from India, they may submit their quotation to India in their own letter form or by telegram so long as all essential particulars are given and provided they simultaneously apply for the tender forms and return them duly completed as quickly as possible on the basis of advance quotations already submitted.

A copy of the tender forms may be examined at the India Store Department, 32-44 Edgware Road, London, W.2, on application to the "CDN" branch. The drawings may be seen at the offices of Hodges Bennett & Company, 59-60 Petty France, London, S.W.1, from whom copies may be obtained at a fixed price per sheet.

The Special Register Information Service, Export Services Branch, Board of Trade, states that it has received from the British Embassy, Rangoon, a copy of a publication, "Catalogue of Supplies and Equipment to be procured by Government of the Union of Burma Purchase Mission 1954" which has the following foreword:—

"This Catalogue contains a general description of the equipment and supplies proposed to be purchased by the 1954 Government of the Union of Burma Purchase Mission and is issued for the advance information only of manufacturers, trade representatives and others interested. The Mission will in due course call for tenders and detailed specifications will be issued therewith. Tenders will be issued for the equipment and supplies in categories as indicated in the Catalogue by the prefixes A, K, etc. Orders will be placed by the Purchase Mission direct with manufacturers, not through local Agents. The services of local Agents may, however, be utilised for the receiving and clearance of goods ordered by the Mission on their arrival in Rangoon. A Catalogue of Services proposed to be procured by the Mission is under issue and will be supplied free to all purchasers of this Catalogue."

Under "Code V—Rail Transport," the following categories appear:—

Rails 75R.—As per Indian Railway Standard specification—21,400 tons, with fishplates, fish bolts, dog spikes and rail anchors

Rolling stock.—Bogie timber wagons, 100; Four-wheel timber wagons, 100; 18-ton covered goods wagons, 750; Open stone wagons, 150; Four-wheel water tank wagons, 20; Boilers, locomotives, seven; Gang cars, seven; Gang cars trailers, 14; Inspection cars, five

Maintenance equipment.—Tie tampers, sleeper boring machines, rail cutting machines, rail drilling machines, electric bolt tighteners, and portable grinding machine

Signals.—Power signalling, three-aspect colour light searchlight signals, and transmitter-receivers

Handling Equipment.—Mobile diesel five-ton cranes, and mechanical fuel handling machines

Diesel Electric Locomotives.—Six, metre gauge, 12-ton axle load, fuel capacity 800 Imperial gall., finished painted, delivered full electric. Complete with spares and descriptive material

Services of Railway Engineer.—One engineer for six months to advise on construction of preliminary works. Two engineers for 12 months to train locomotive crews and maintenance staff

Steel Corridor Coaches.—18 Bogie, day upper (fully equipped); 13 bogie, night upper (fully equipped); 7 bogie, restaurant (fully equipped); 39 bogie, day third; 9 bogie, half mail (fully equipped); 16 bogie, brake luggage; 75 ballast hopper wagons, metre gauge, four-wheel

Note.—The coaches to be in accordance with Union of Burma Railways Board specifications

No copies of this Catalogue are available in the United Kingdom at present nor has the Government of Burma yet made arrangements for distribution. Information on procurement will be published in the Special Register as soon as possible.

It is understood that tenders will be called for later and will be examined by the Purchasing Mission which will visit this country. There is no information yet available to the Department as to the procedure which will be adopted, the composition of the Mission, the address to which tenders should be sent, or the date of arrival of the Mission. Further details will be announced in the Special Register when these are known.

B.T.C. Motive Power Committee

On the occasion of its summer meeting which was held in Lincoln, the Motive Power Committee of the British Transport Commission visited some of the works of Ruston & Hornsby Limited on July 23. Those taking part in the visit were:—

Messrs. R. F. Harvey, Chief Officer (Motive Power), and chairman of the committee; R. H. Frankland, Administrative & Motive Power Assistant; E. D. Trask, Motive Power Superintendent, Eastern Region; T. E. Chrimes, Motive Power Superintendent, Southern Region; F. H. Petty, Motive Power Superintendent, North Eastern Region; C. R. Campbell, Motive Power Superintendent, Scottish Region;

Left to right: Messrs. E. D. Trask; C. J. Whitcomb; H. G. Kerry; T. E. Chrimes; F. H. Petty; G. B. R. Feilden, Engineering Director, Ruston & Hornsby Limited; R. F. Harvey; F. J. Stadden; C. R. Campbell; R. H. Frankland; R. D. Snape; and S. T. Clayton

S. T. Clayton, Motive Power Superintendent, London Midland Region; H. G. Kerry, Assistant Motive Power Superintendent, Western Region; and R H. Snape, Secretary, Motive Power Committee.

At the Boultham Works of Ruston & Hornsby Limited the Committee saw a wide variety of diesel locomotives under construction and in course of test. Among the units seen were flameproof locomotives for coal mines; narrow-gauge machines for quarry and plantation work; and shunting locomotives up to 44 tons in working order for general industrial and main-line duty. An oil-operated locomotive transmission equipment, being manufactured in the same factory, was a notable feature shown.

A Ruston TA gas turbine, which is being produced on a quantity basis, was started up and demonstrated at the Anchor Street Works. Here also the party toured the Gas Turbine Machine & Erecting Shops, where the machining of blades and compressor casings, broaching of discs and blade inspection were some of the operations in which considerable interest was shown.

Finally the Motive Power Committee visited the Iron Works, which concentrates on the production of diesel engines. At this factory engines ranging in power from 5 h.p. to 2,410 h.p. were seen in the erecting shops and on test.

Notes and News

Vacancy for Junior Draughtsman.—A junior draughtsman is required for the London Office of the Drewry Car Co. Ltd. See Official Notices on page 168.

Earnings of Road Haulage Workers.—An analysis by the Road Haulage Association of the earnings of workers covered by the Road Haulage Wages Orders embraces two four-weekly periods in November, 1953, and March, 1954. It shows that the average weekly wage of drivers for the first period was £8 19s. for an average working week of 54.2 hr. For all workers (drivers, statutory attendants, and other road haulage workers) the average wage was £8 14s. 7d. for 53.5 hr. For the second period, drivers earned on the average £9 8s. 7d. for an average working week of 54.3 hr. and the average wage for all workers was £9 3s. 10d. for 54 hr. Between the two enquiries, a statutory increase came into effect of 4s. in the basic weekly wage for 44 hr. of all workers aged 21 or over.

"Cornish Riviera Express."—The up "Cornish Riviera Express" of the Western Region is allowed 4 hr. 15 min. between Plymouth and Paddington, not 4 hr. 25 min., as stated in our July 9 issue. The second timing applies to the 9.40 a.m. relief train from Falmouth.

Commonwealth Engineering Company.—The Commonwealth Engineering Company, which has its main works at Granville, New South Wales, is to establish a subsidiary in Victoria and build a works at Dandenong near Melbourne. The company already owns works at Rocklea, Queensland, and Perth, Western Australia.

Rhodesia & Nyasaland Loan.—Lists for the £10,000,000 loan for the Federation of Rhodesia & Nyasaland, the subject of editorial comment in last week's issue, were closed within a few minutes of opening on July 28. After market hours the Bank of England announced that, while applications for amounts up to and including £1,000 had been allotted in full, allotments to applicants for larger amounts would be limited to some 48 per cent of the amounts applied for, with a minimum allotment of £1,000.

European Management Conference.—At the request of the European Council of the International Committee for Scientific Management, the British Institute of Management has undertaken to organise a European Management Conference this Autumn. It will take place at Torquay from October 20 to 23. The theme of the Conference is "The Contribution of Management to European Prosperity," and its object is to provide a forum for senior managers from European countries to exchange views and experiences on different problems of management. A variety of subjects will be covered. The chairman at the session dealing with "Modern Application of Financial Control" is Mr. H. Wilmot, Chairman and Managing Director of Beyer Peacock and Co. Ltd.

Collision on Austrian Federal Railways.—Twenty persons are reported to have been injured when an Innsbruck-Munich diesel train ran into a local passenger train on the Innsbruck-Mittenwald line of the Austrian Federal Railways on July 31. Many others suffered minor cuts and bruises

Sales of Transport Units.—The British Transport Commission has issued List No. 7 of transport units for sale by tender. Most units offered are small and without premises, and many have been offered previously. The list is extensive and includes units in all areas and from the Special Traffics Division. Tenders must be received by 10 a.m. on September 8, unless land and buildings are involved, when the time is 10 a.m. on September 22.

Excursions to Swindon Works.—British Railways, Western Region, arranged a special refreshment car excursion from Paddington on August 4 and there are departures on August 11, 18, and 25 for visitors to Swindon Works. Leaving at 10.45 a.m., the special trains are due at Swindon at 12.27 p.m.; guides conduct parties over the Locomotive and Carriage and Wagon Works and describe the principal features. Bookings for these excursions are limited, and the tours are restricted to passengers aged 12 years or over, with a responsible adult accompanying those aged 12-16. The return fare is 10s.

United Railways of Havana.—The liquidators of the United Railways of Havana & Regla Warehouses Limited announce that persons claiming to be creditors of the company have lodged claims to a total exceeding £3,000,000. The funds available in the liquidation amount to about £2,510,000. In these circumstances, the statement says, the application to the Court for leave to make interim distributions to holders of second income loan stock and consolidated stock could not be carried any further at this stage. "Although the liquidators have been advised that the company no longer has any responsibility for the amounts claimed and will accordingly reject the claims, each claimant must be given the opportunity of applying to the Court to reverse or vary the liquidators' decision."

C.I.E. Salary Claims.—When the Joint Industrial Council sat on July 30 to hear claims submitted by the Transport Salaried Staffs' Association on behalf of the salaried staff of Coras Iompair Eireann, Mr. Richard McGonigal, the Chairman, said that the majority of the Council was in favour of adjourning the claims. He said that the adjournment would be pending a detailed examination of salaries paid by C.I.E. and other transport undertakings. Senator D. F. Murphy, for the Association, said that there was need for a revision of salaries to shorten the incremental ladder and improve differentials. Salary increases since 1950 had not preserved the relative positions of C.I.E. salaries with those of other industries, nor, on a percentage basis, did they equal those given to wages

Decorations for Royal Visit to Swindon

Swindon Junction Station decorated for the arrival of H.M. the Queen on July 23

grades. For C.I.E. it was stated that any increases awarded could be met only by increased fares and charges and by economies. The cost of meeting the demand would be £841,924 in a year.

Bridge Collapse in Spain.—Thirteen of the 14 people on board are reported to have been killed when a goods train fell 75 ft. from a collapsing bridge at Petruegano, about 120 miles north-west of Cadiz. The one passenger coach had been taken off at Frenegal, about 10 miles south of Petruegano. The only survivor suffered slight leg injuries.

Model Railway Exhibition at Redhill.—A Southern Counties Model Railway Exhibition will be held at the Colman Institute, London Road, Redhill, Surrey, on September 18, from 11 a.m. to 9.30 p.m. Admission will be 1s. 6d., children half price, in aid of the local branches of Toc H. British Railways will be among the exhibitors, and, besides static railway models of various gauges, there will be working layouts.

English Steel Corporation at the Baghdad British Trade Fair.—The English Steel Corporation Limited will be among the exhibitors taking part in the British Trade Fair at Baghdad from October 25 to November 8. Besides large coloured photographs and illustrated brochures to show the scope of the company's productive capacity, exhibits will include a selection of items most appropriate to the industrial economy of the area. Amongst these are a wide range of engineer's cutting tools, tool steels, files and hacksaw blades, laminated and coil springs, and drop forgings.

Manila Railway Co. Ltd.—The liquidator of the Manila Railway Co. (1906) Ltd. has announced that repayment of the 5 per cent non cumulative preference stock at par and a first and final distribution of 10s. 3¼d. for each 1s. unit of ordinary stock will be made on August 31. Circulars to preference and ordinary stockholders, with forms for completion by them, will be despatched on August 10. The registers of members will be finally closed on August 3. Holders of preference and ordinary stock who do not receive the circular from the liquidator are asked to communicate with him at 9-13, King William Street, London, E.C.4, in case changes of address have not been notified to the company.

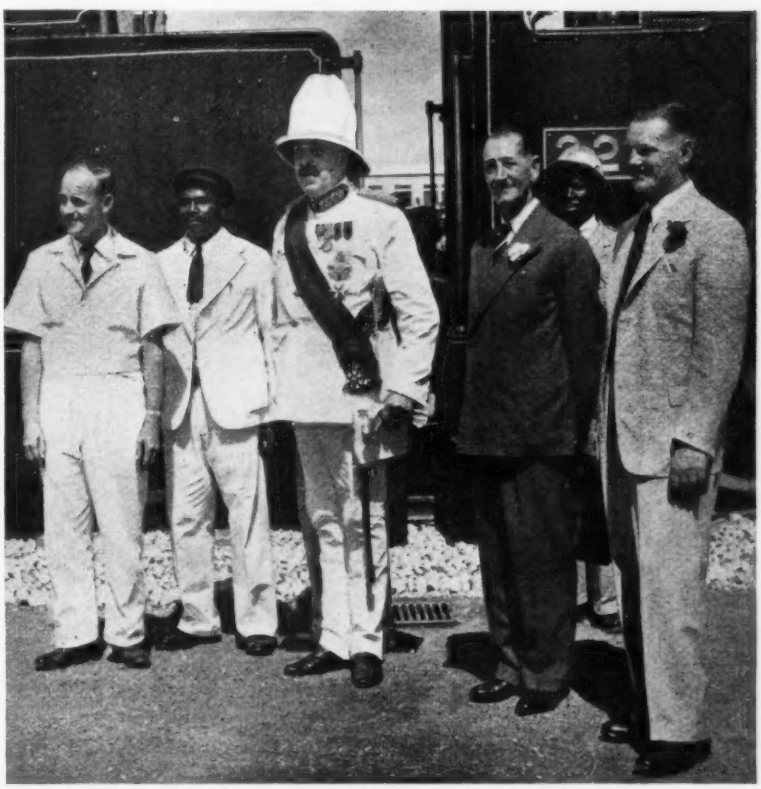
A.C.F. Industries Incorporated.—A.C.F. Industries Incorporated (formerly American Car & Foundry Company) in its annual report for the year ended April 30, 1954, states that the year was marked by a change in the business atmosphere of the country which affected the business of almost all large companies. Nevertheless, the company's production was at a favourably high level and sales amounted to $245,000,000 compared with $257,000,000 in the previous year. Net profit totalled $7,778,000 ($8,684,000). In his letter to the shareholders accompanying the report, the chairman said that during the early part of the year, the outlook for additional freight car orders was poor, but there was an improvement subsequently and some orders had been booked. There had been an increased interest in flat wagons specially designed to carry loaded lorries. The company was fully prepared to meet demands for such vehicles. There had been an increased interest in the low-slung lightweight type of passenger train typified by the Talgo trains which the company had built and which had been in regular daily use in Spain for the last four years. One railway had given an order for such stock and another was making demonstration runs of the firm's exhibition Talgo train. Others were negotiating and it was hoped that before long trains of this type would be running on American rails with the same success as in Spain.

Braithwaite & Co. Ltd. Results.—The group profits of Braithwaite & Co. Ltd. for the year ended March 31, 1954, after deduction of all charges except taxation, amounted to £122,248, compared with £66,800 in the previous year. After taxation, profits were £38,248 (£17,814). The proposed final ordinary dividend is 6 per cent (3½ per cent), making 10 per cent (7½ per cent) for the year. The dividend will require £18,168 (£14,673). The figures include the dividend received from the Indian subsidiary on a group basis. The accounts of this subsidiary are published separately and not consolidated with accounts of the parent.

Ruston & Hornsby Limited Chairman's Statement.—In his circulated comments on the report and accounts of Ruston & Hornsby Limited for the year ended March 31, 1954, Mr. W. J. Ruston, the Chairman, says that the slight decline of despatches from the Group during the year would have affected earnings very little, but there has been at the same time a rapid and general increase in costs. Trading profits of the group at £2,006,021 show a fall of £322,918 from the previous year, while net profits, at £1,062,703, fell by £63,819. The intensive competition in world markets, he says, combined with licensing difficulties and the lack of sterling in many important markets, led the firm to feel that it could not maintain its position if prices were raised to correspond with increased costs, and it would therefore endeavour to maintain or even reduce prices. During the current year many newly-developed products will be in full production, including a new horizontal railcar engine produced by Davey, Paxman & Co. Ltd.

Barsi Light Railway.—The directors of the Barsi Light Railway Co. Ltd. report that a director has laid before the Indian Government authorities the reasons why the company is unable to agree to some of the proposed deductions from the purchase price for the undertaking. The matter is still under consideration. The board also report that an action has been brought against the company in a local Civil Court in Bombay State, on behalf of some of the late employees claiming compensation for retrenchment under the Industrial Disputes (Amendment) Act. The amount involved is "considerable" and the claim is wholly rejected by the company. The directors feel it may be necessary to pursue this matter right up to the Supreme Court. In these circumstances no dividend on the ordinary stock is possible and it may be some time before liquidators can be appointed and a return of capital made.

Opening of Southern Province Railway, E.A.R. & H.



H.E. Sir Edward Twining at Mtwara on July 17; to the right are Major-General W. D. A. Williams and Mr. A. F. Kirby (*see article on page* 152)

Railway Stock Market

Buoyant and active conditions again were in evidence in stock markets with further gains resulting in British Funds and a wide range of industrial shares. Sentiment was unaffected by news of important new issues, which will absorb a large volume of investment money. The advance in values in recent weeks has reduced yields on existing securities, so that new issues offering a reasonable return are assured of big demand. Sentiment generally has continued to reflect the view that prospects indicate a cheaper money policy and a reduction in the bank rate to 2½ per cent. In fact, the recent behaviour of stock markets in the face of threatening international developments indicated the general feeling of confidence.

Many investors now have substantial profits on shares bought earlier in the year, but they show little disposition to sell, though brokers often advise that it would be prudent to sell half their holdings. The rise in stock markets cannot go on for ever. The boom-like conditions have continued much longer than was generally expected. The point is, however, that while investors refuse to sell, and the amount of shares available in the market is small, even moderate buying can result in a sharp making up of prices to still higher levels.

Foreign rails attracted only moderate attention again, but after their recent reaction, Antofagasta came into demand with the preference stock improving to 41 on the announcement of another 2½ per cent dividend. This tended to draw attention to the attractive yield and the outstanding arrears of dividend which make the stock appear one of the most attractive in the foreign railway market from the point of view of income and scope for eventual appreciation in price. Antofagasta ordinary stock changed hands around 8¼, and the 5 per cent (Bolivia) debentures up to 69¼. Should there ever be a question of a take-over offer, the preference stock would be worth par plus any arrears of dividend, and there is no doubt too that the ordinary stock has a break up value much in excess of its current market price.

Dorada Railway ordinary stock was less active, but has been dealt in around 85½. Business at 29 was recorded in Chilian Northern 5 per cent first debentures. International of Central America stocks, dealings in which had not taken place for some time, have changed hands, the 5 per cent preferred stock at $100 and the 5 per cent bonds around £141½. After the repayment notice, Manila Railway ordinary shares strengthened to 10s.; the preference shares were 19s. 9d.

San Paulo ordinary units were 3s. 6d., Nitrate Rails shares 20s. 3d. and Taltal shares 12s. 3d. Mexican Central "A" bearer debentures were 90¾. Barranquilla 10s. shares have changed hands at 1s. 10½d. There was rather more business in United of Havana stocks with the second income stock at 36½ and the consolidated stock 5¼.

Among Indian stocks, Barsi remained under the influence of the statements in the annual report and were again dealt in around 106. The report refers to the claim by some employees involving a considerable sum, but the claim is wholly rejected by the company. The directors tell stockholders that it may be some considerable time before liquidators can be appointed and a return of capital made. East India Portuguese 5 per cent stock showed business up to 90½.

Elsewhere, Nyasaland Railway 3½ per cent debentures transferred at 79¼ and the shares at 4s. 10½. Midland of Western Australia was 21.

Canadian Pacifics remained active, but at $48½ failed to hold best levels; the 4 per cent preference stock kept firm at £68 with the 4 per cent debentures £90½. White Pass no par value shares were $25.

Among road transport the trend was again firm with very few sellers about, as most of the shares are held as permanent investments in view of their good dividend record. West Riding were 31s. 3d., Southdown 31s. 6d. and Lancashire Transport 59s. 6d. B.E.T. 5s. "A" units were steady at 59s. 3d. having remained under the influence of Mr. H. C. Drayton's review at the annual meeting.

Among engineering shares, Vickers improved to 34s. 3d. and were being bought on the assumption that if a new issue is made, shareholders will have preferential rights of allotment. Clarke Chapman rose further to 69s. Among steel shares, the premium on Stewarts & Lloyds has increased to 2s. 6d.

There was rather more business in shares of locomotive builders and engineers. Vulcan Foundry eased to 27s. North British Locomotive were 16s. 9d., Gloucester Wagon 10s. shares 19s. 3d., and Beyer Peacock 41s. while Wagon Repairs 5s. shares were 13s. 7½d. Elsewhere, Hurst Nelson were 42s. and Birmingham Carriage 27s. 7½d.

OFFICIAL NOTICES

The engagement of persons answering Situations Vacant advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

JUNIOR DRAUGHTSMAN for London Office, preferably with some previous Diesel Rail Traction experience. The Drewry Car Co. Ltd., City Wall House, Finsbury Pavement, London, E.C.2.

SALES ENGINEER required for Company marketing diesel trains and trolley buses. Should have some technical training particularly with regard to diesel engines and transmissions. Commercial experience an asset, salary dependent upon experience. Box 295, *The Railway Gazette*, 33 Tothill Street, London, S.W.1.

GENERAL MANAGER required by Company manufacturing Diesel Electric Locomotives. Wide over-all experience in General Design, Production, Sales Organisation and Contract work essential. Applications in confidence to Box 3F.H.4071, A.K. Advertising, 212a, Shaftesbury Avenue, London, W.C.2.

TRAFFIC ASSISTANTS required for Central Railway of Peru and Guaqui-La-Paz Railway (Bolivia). Qualifications required: previous training in Railway Traffic Department or Transportation Company. Active and of first class health. Age 25/35 years. Preferably single. Knowledge of Spanish most desirable or willingness to learn within six months. Future prospects for right man willing to take opportunities. Apply, Secretary, Peruvian Corporation Limited, 144, Leadenhall Street, London, E.C.3.

BRITISH RAILWAYS—Southern Region. Electrical Engineering Technical Assistants are required for work connected with Electric Rolling Stock. General workshop experience an advantage. Applicants should not be more than 30 years of age and have a sound technical training having reached Higher National Certificate in Electrical Engineering standard, or equivalent. Commencing salary £350 p.a. at age 22 rising to £521 10s. p.a. at age 30. Applicants holding certain academic qualifications may receive up to £75 p.a. in excess of these rates. Applications in writing to be addressed to Mechanical & Electrical Engineer, 15, St. Thomas Street, London Bridge, S.E.1.

HER MAJESTY'S COLONIAL SERVICE. Mechanical Engineers, Malayan Railway. To be in charge of *either* a group of Workshops in a Railway Works engaged in the repair of locomotives, the building and repair of coaching stock and goods vehicles and the maintenance of Mechanical plant and equipment *or* a district in the locomotive Operating Branch, including the supervision of Running Sheds and running maintenance of locomotives, carriages, wagons and marine craft.

Appointment is pensionable on agreement for three years in the first instance in salary scale £739—£1,680 per annum (point of entry depending on experience and service in the forces), plus a pensionable expatriation allowance varying from £266—£364 per annum. In addition a non-pensionable expatriation allowance varying from £91—£259 per annum is payable to married candidates. A substantial cost of living allowance is also payable. Free passages are provided for the officer, his wife and up to three children under the age of 10. Furnished quarters if available are provided at reasonable rents. Leave is granted at the rate of four days for each month of residential service.

Candidates between the ages of 25-35 years, must be Corporate Members of the Institution of Mechanical Engineers or have passed or be exempt from Parts A and B of the examination for A.M.I.Mech.E.

Apply in writing to the Director of Recruitment, Colonial Office, Great Smith Street, London, S.W.1, giving briefly age, qualifications and experience. Mention the reference number BCD 110/60/07/D/15.

THE HIGH COMMISSIONER FOR INDIA invites tenders for the supply of:— Laminated Bearing Springs, silico-manganese steel, complete with buckles, packing plates and set screws as under:— 1,300 for Wagons, 8 plates, 3 ft. 6 in. centres straight. 670 for Wagons, 13 plates, 3 ft. 6 in. centres straight. Forms of tender may be obtained from the Director General, India Store Department, 32/44, Edgware Road, London, W.2, on or after August 6, 1954, at a fee of 10s. which is not returnable. If payment is made by cheque, it should please be made payable to "High Commissioner for India." Tenders are to be delivered by 2 p.m. on Friday September 3, 1954. Please quote reference No. 82/54/DH/RLY.3.

THE HIGH COMMISSIONER FOR INDIA invites tenders for the supply of:— 100 pairs Wheels and Axle, Solid rolled Steel Wheels 2 ft. 4½ in. dia. on tread with Axle 9 in. × 4½ in. journals. 100 pairs Wheels and Axle, solid rolled Steel Wheels. 2 ft. 4½ in. dia. on tread with Axle 7 in. × 4 in. journals. Forms of tender may be obtained from the Director General, India Store Department, 32/44, Edgware Road, London, W.2, on or after August 5, 1954, at a fee of 10s. which is not returnable. If payment is made by cheque, it should please be made payable to "High Commissioner for India." Tenders are to be delivered by 2 p.m. on Friday September 3, 1954. Please quote reference No. 17/54/DH/RLY.3.

THE HIGH COMMISSIONER FOR INDIA invites tenders for the supply of:— 169 Coupling Rods, Class X Steel for Locomotives, "B" Class, YG Class "YB" Class, "YF" Class and "B & P" Class, Leading, Trailing and Intermediate, R.H. and L.H. Forms of tender may be obtained from the Director General, India Store Department, 32/44, Edgware Road, London, W.2, on or after August 6, 1954, at a fee of 10s. which is not returnable. If payment is made by cheque, it should please be made payable to "High Commissioner for India." Tenders are to be delivered by 2 p.m. on Friday September 3, 1954. Please quote reference No. 47/54/DH/RLY.3.

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August 18 (*Wed.*) to August 28 (*Sat.*).—"The Model Engineer" Exhibition at the New Horticultural Hall, London, S.W.1.

Until September 25 (*Sat.*).—"Popular Carriage" Exhibition (Two centuries of carriage design for road and rail) in the Shareholders' Meeting Room, Euston Station, London, N.W.1. Weekdays 10 a.m. to 7 p.m.; Sundays 2 to 7 p.m.